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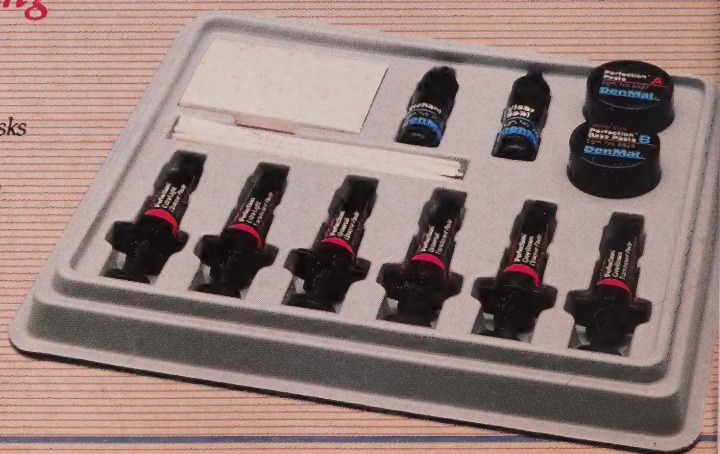
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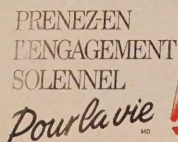
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# JOURNAL

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Published monthly by the Canadian Dental Association at 1815 Alta Vista Drive, Ottawa, Ont. K1G 3Y6. Copyright 1982 by the Canadian Dental Association. Authorized as Second Class Mail Registration Number 5384. Postage paid at Ottawa.

Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada – \$40; United States – \$40; all other – \$44. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal.

ISSN0709 8936



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# Editorial

**Editor's Note:** The editorial in the March edition was written by Dr. John Hardie, Chief of Dentistry at the Ottawa Civic Hospital. This month's editorial is by Dr. Don MacFarlane, a dentist in private practice in Vancouver.

## CAPITATION: Another Perspective

**W**e're all aware that change is inevitable. If capitation hadn't come along, then something else would have. When it comes to change affecting the profession of dentistry and the services we deliver to Canadians, we have, in my opinion, a responsibility to manage the changes, to debate the issues, and to educate both the public and the dental profession. We must also influence the entrepreneurs and the dental carriers who develop and promote alternative funding systems, in order to bring these systems to a level which will assist the patients to afford good dental health care and not anything less.

Some of the reasons capitation plans or other alternatives are being scrutinized are:

- To effect cost control or, if possible, see some savings in dental plan costs due to increased utilization of services, as well as increased fees.
- To provide a profit to dental carriers or entrepreneurs for marketing and administering dental plans. Traditional plans provide very little profit, especially the Administrative Services Only plans (ASOs) which now represent 90 per cent of all dental plans.
- A significant percentage of the large group plans are part of contracts in which the benefit is described as plan coverage and not in dollars per member. This provision makes it difficult to alter costs without reducing the benefits which would have to be negotiated down.
- The entrepreneurs feel the manpower situation provides a window of opportunity they can exploit, as some dentists would like to be busier.

What is wrong with capitation as it is now promoted? As I see it, there are several current problems.

- The key problem with capitation is inadequate funding to pay for dental care. Built in to capitation is a larger share of the premium for administration and profit than the current Administration Only Programs, in which \$0.91-0.92 of each premium dollar pays for treatment. If you add to this the premium reduction promoted by the capitation plans of up to 40 per cent, it is easy to see that there cannot be sufficient funds to pay for the quality of care and the utilization rates Canadians expect.
- The closed panel approach, where the patient must select from a very few dentists, infringes on the patient's freedom of choice. If adequate levels of compensation to dentists were built in, closed panels would be unnecessary and the patient's freedom to choose a dentist would not be affected.
- In capitation, the risk is transferred to the dentist. Because the dentist is paid on a per capita basis and not a fee-for-service basis, it puts the dentist in a position of conflict; he must both keep the costs down (as the insurer) and treat the patient's needs (as an ethical practitioner).
- Some capitation contracts are extremely restrictive and should not be entered into lightly.

What criteria must be met for a new funding arrangement to be effective? It should:

- Encourage improvement in the dental health of the group covered.
- Provide good value for the money paid.
- Be neutral regarding any inducement to underservice or overservice.
- Provide adequate compensation for the dental office.
- Not transfer undue risk to the dentist.
- Be marketable and attractive to benefit consultants and purchasers.
- Be easily administered.

How do the currently promoted capitation plans measure up? Not very well, if you take a close look at them. The funding levels suggested are inadequate, putting the dentist's financial well-being at risk and, through this risk, putting the patient's care at risk. There are many examples in the U.S. where the level of care and value of the care under capitation plans were significantly lower than under fee-for-service dental plans. The only criteria capitation meets are those of being marketable and easily administered.

Simply because the dental plan carriers are trying to foist a product on the public and the profession is no reason to try it. Many of the carriers really do not fully understand what they are marketing. Their response has been "if the competition is offering it, we'd better get involved as well". Some readily admit they also have concerns about the product and do not expect that it will assume more than 10 per cent of the market.

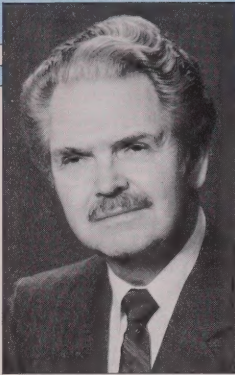
Surely it is the profession's responsibility to denounce a product that does not measure up. Only through debate and aggressive action can the product be improved or be shown to be inadequate. Some have said the profession is reacting in a "knee jerk response". The concerned members of the profession have researched the American experience and, with thoughtful and deliberate action, are taking the steps necessary to ensure that those experiences do not recur in Canada.

A dramatic message needs to be delivered to the public that the plans are inadequate and are not what they are promoted to be. The most effective method available to the dental profession to prevent the spread of these poorly conceived capitation plans is not to sign up to service the plans. If there are no dentists willing to assume the risks and become involved, capitation plans cannot exist.

**Remember — No dentists, no capitation!**

Dr. Donald E. MacFarlane  
Vancouver, B.C.  
Chairman, CDA Third Party Dental Plans Committee





## DID YOU KNOW?

by Dr. Ralph Crawford  
Chairman, Membership Committee

### MISSIONS: GOALS: AIMS

**DID YOU KNOW?** The word *mission* comes from the Latin verb *mitto, mittere, misi, missum*, meaning to send, to give forth, to release.

**DID YOU KNOW?** That when a business or organization is small, perhaps a single owner or family enterprise, the philosophy and role of that business is usually well known and defined. However, when the organization expands into an industrial giant embracing many owners and shareholders, it is easy for the original "mission" to become obscured. Realignment is necessary. This is why some of the world's leading industrial empires, such as I.B.M., Shell Oil, C.I.L., have developed "Mission Statements" in order that their multitude of players may be able to focus clearly upon the aims and purposes of their very existence.

**DID YOU KNOW?** That Peter F. Drucker in his book "Management: Tasks, Responsibilities, Practices" strongly advocates that industry and individuals alike should develop "Mission Statements" . . . . .

*Says Peter Drucker . . . . .*

*"Many organizations are developing formal mission statements that they share with division heads, employees, and in many cases, customers and the public at large. A well-worked-out mission statement provides corporate personnel with a shared sense of opportunity, direction, significance, and achievements. The company mission statement acts as an "invisible guide" that guides widely dispersed employers to work independently and yet collectively toward realizing the organization's goals."*

**DID YOU KNOW?** The C.D.A. Board of Governors at the Annual meeting in Halifax, August, 1986, formally adopted. . . .

#### THE CDA MISSION STATEMENT

*The Canadian Dental Association serves the dental profession — and through the profession the Canadian public — as the authoritative national voice and resource for dentists.*

*In cooperation with the provincial dental associations and affiliated organizations, CDA offers services, in both official languages, intended to support and advise all areas of dentistry and to represent, protect, promote and develop the interests of the dentist as ethical practitioner, professional, educator, student, researcher, business person, citizen and individual.*

*CDA recognizes a particular responsibility to contribute to the development of national positions and standards related to dentistry, dental education, dental research, dental equipment, dental materials and dental personnel.*

*CDA is dedicated to the principle that all Canadians should have the best oral health care it is possible to provide; it actively seeks input from and dialogue with governments, consumers and all those interested in dentistry to enable it to serve more effectively both its members and the Canadian public.*

*"The secret of success is constancy to purpose."*

(Benjamin Disraeli, 1804-1881)

have been covered by a provincial dental plan, if the services had been rendered in the province of residence.

#### (ii) Residents outside Canada

When expenses are incurred for a particular service or item, the Plan recognizes only those amounts considered "reasonable and customary". The Administrator will determine the general level of charges for any specific service or item, in the region where the expense is incurred. Published fee guides of associations of practitioners will be consulted for that purpose, where applicable. Any portion of an expense in excess of that "reasonable and customary" amount will not be covered under the Plan.

#### (b) Frequency Limits on Eligible Expenses

There are specified limits on how often the DCP will recognize certain expenses.

#### (c) Exclusions and Limitations

In addition to reviewing the details of eligible expenses, it is important to note the exclusions and limitations.

### Reimbursement

#### (a) Deductible Amount

For each calendar year, there is a minimum deductible amount; only the eligible expenses incurred during the year, which exceed that deductible amount, are eligible for reimbursement under the Plan.

The annual deductible amount is \$25 per covered person. However, where eligible expenses are incurred in a calendar year in respect of more than one person in a family, then the combined deductible amount which must be exceeded for all persons in that family will be limited to \$50 per calendar year.

The above deductibles are those applicable for the 1987 calendar year. They may be revised upward each year by the Board of Management so that they remain relevant. Changes to the deductibles will be made available to members of the Plan through their personnel offices.

#### (b) Co-insurance

The Plan will reimburse a percentage of the covered expenses incurred for a particular eligible service or item which exceed the annual deductible amount, and subject to any reimbursement limits which are identified in the paragraphs below. The remaining percentage must be paid by the member.

The reimbursement percentage depends on the type of eligible service:

50 per cent for major restorative, major prosthodontic and orthodontic services; and

80 per cent for all other eligible service.

#### (c) Annual and Lifetime Limits

The maximum reimbursement amounts are as follows:

— \$1,000 per year per covered person for



all services excluding orthodontic services; and  
— \$1,000 lifetime total per covered child for all eligible orthodontic services.

#### (d) Methods of Reimbursement

Reimbursements under the DCP are normally made in a lump sum, but for orthodontic services, the Administrator will normally reimburse on a quarterly basis.

#### (e) Treatment Plan

Prior to obtaining dental services, the employee may submit a treatment plan to the Administrator when the estimated cost of a treatment suggested by your dentist is expected to exceed \$300.

Upon receipt of a treatment plan, the Administrator will advise on the amount of benefits payable under the DCP for services proposed.

#### (f) Duplicate Protection

When dental expenses are covered under more than one plan, the combined reimbursement from all plans cannot exceed the amount of expenses incurred.

For example, when the employee is a member of this Plan and of the Group Surgical-Medical Insurance Plan (GSMIP), the employee benefits from combined protection for certain types of complex surgical dental services and for dental services required as a result of injury to natural teeth.

If such services are rendered to the employee or covered dependants:

##### (i) For services required because of an injury

First submit a claim to the GSMIP. If full reimbursement for your dental expenses is not obtained, the employee may then submit a duplicate of the claim form along with a copy of the benefit payment to the DCP.

##### (ii) For surgical services

First submit the claim to the DCP and, where applicable, you may submit a claim for any unpaid expenses to the GSMIP.

When for any other reason the employee or covered dependants also benefit from provincial coverage for certain dental expenses, first submit the claim to the authority concerned.

When a spouse is covered under this Plan and under another plan, a spouse should first submit his or her claims to the other plan.

When children are covered under this Plan and under a spouse's plan the plan which pays first will be determined by a general agreement which insurance companies have devised. Under this arrangement, if the employee's birthday falls earlier in the year than a spouse's, the DCP will pay first. If a spouse's birthday is earlier during the year, he or she must claim first under his or her plan.

# AD LIB

BY CUSPID

## PREVENTION — MISSIONARY WORK?

It used to be said, before the adoption of meretricious metric in this land, that an ounce of prevention was worth a pound of cure.

This is truer of dental health than perhaps of any other kind. . . because, without prevention, there's nothing left to be cured. In that sense, much of dentistry is preventive medicine.

Nonetheless, dentist Dr. Joseph L. Bernier, in an article titled "The dentist as an obstacle — a philosophy" (*International Journal of Orthodontics*, June 1981) said that the term 'preventive dentistry' means different things to different people. Says Bernier: "Some maintain that dental practice, as it has evolved over the past several decades, is in fact preventive dentistry and that it should remain undisturbed. To others it is water fluoridation, or a program for children; still others visualize it as a mass educational effort".

Noting that in medicine the greatest milestones have been related to prevention, Dr. Bernier cites sterilization, pasteurization, purification of water . . . and the control of disease-bearing animal and insect vectors.

But so far as dentistry is concerned, says he, "it is not enough to be concerned with simply teaching a patient how to clean his teeth and massage the gingival tissues; rather, he must be brought into the total plan. The objective must be to ensure that he understands what is to be done and why it is necessary. In addition, he must have a burning desire to help in achieving the necessary result".

And this, it seems to me, is the key point in prevention — motivation. Dentists must take — if you'll forgive the expression — a missionary position. Yet converting dental heathens into true believers is clearly no easy task. To a far greater extent than do their colleagues in the medical profession, dentists see in almost all of their patients the wages of sin of commission or omission so far as prevention is concerned.

Moreover, prevention, as well as being missionary is also somewhat Jesuitical — getting to the kids so as to instigate dental self-help as early as possible.

In fact, A.J. Rifkin, writing in the *Journal of the Dental Association of South Africa* (May 1981) takes the concept of prevention even further back, or, one might convincingly argue, further forward. Rifkin quotes a study of 771 patients who were divided into two main groups: a control group in which the mothers of the children in this group used fluoridated water only during pregnancy; and a sodium fluoride tablets group, in which the mothers of the children ingested a 2.2 mg. tablet daily during pregnancy. Results showed that only 23 per cent of the control group were caries-free compared to 97 per cent of the study group. Further, the teeth of the children whose mothers took the fluoride tablets during pregnancy were whiter, and had no occlusal pits or fissures. The study strongly recommended the sodium fluoride regimen daily for women in the third to ninth month of pregnancy.

Considering that author Rifkin is a member of the Department of Conservative Dentistry at the University of Witwatersrand in Johannesburg, his advice seems fairly radical . . . although surely a department of radical dentistry would hardly be sanctioned by the South African government.

R.M. Edwards, in an article titled "A national strategy for prevention" (*British Medical Journal*, July 21, 1981) suggests that the dental profession in the UK is still geared to therapy, and is largely untrained for prevention and ill-prepared for change. Nonetheless, Edwards credits UK dentists with influencing a large percentage of the population to believe that regular dental examination and treatment are necessary to secure dental health. He adds, though, that "unfortunately, studies show that this, by itself, does not prevent dental disease; self care is also required."

It seems, then, that prevention is not only missionary work — but highly collaborative. It involves not only the dentist but also the patient . . . and possibly ancillary staff in the dentist's office. In fact, describing her part in prevention, a receptionist/secretary in a British dental office says: "It is my responsibility to project the practice philosophy at all times so that I have to be prepared and able to discuss our preventive beliefs when necessary, to use opportunities for teaching when they arise and to show by my own appearance and healthy mouth, that our preventive ideas are personally important to me."



## Eligible Expenses

Below is a summary of the major features of the Plan's eligible services by category.

### (a) Benefits Reimbursed at 80 per cent

#### Diagnostic

examination, X-rays

#### Preventive

laboratory examination, dental cleaning and polishing, topical application of fluoride, space maintainers

#### Minor Restorative

by amalgam, silicate, acrylic or composite

#### Endodontics

root canal therapy

#### Periodontics

treatment of gums

#### Minor Prosthodontic (removable dentures)

repair and adjustments, relining and rebasing

#### Surgery

extractions of teeth, other surgical procedures

#### Adjunctive Services

emergency services, anaesthesia

### (b) Benefits Reimbursed at 50%

#### Major Restorative

gold and porcelain restorations, crowns.

#### Major Prosthodontic

complete dentures, partial dentures, pontics, repairs of fixed dentures

#### Orthodontic (with respect to a covered child)

examinations, surgical services, observation and adjustments, fixed appliances, removable appliances.



On June 28, festivities begin at the Pacific Dental Conference, with a pre-Convention golf tournament at the Banff Springs Golf Course. This panoramic view of the golf course depicts the famous Banff Springs Hotel in the background.



Banff's busy and attractive main street leads to its famous hotel and golf course.

## PACIFIC DENTAL CONFERENCE IN BANFF, ALBERTA: JUNE 28-JULY 1

The Pacific Dental Conference, sponsored by The Pacific Dental Federation and the Alberta Dental Association, begins in Banff, Alberta June 28, 1987 and runs through until July 1.

The Conference is being held at the Banff Springs Hotel and features several well-known speakers and some notable social events. On June 28, the festivities start off with a pre-convention golf tournament at the Banff Springs Golf Course, followed by registration. The exhibits open that day as well, and delegates may enjoy a welcoming party.

The first day of the convention features Dr. David Garber, who will speak on composites and esthetics. Dr. Garber, who also spoke at last year's CDA convention in Halifax, is a popular speaker from Atlanta, Georgia. The luncheon that day features Alberta Government representatives. The evening's entertainment features the Giant Western Barbeque.

June 30 will be highlighted by a presenta-

tion on endodontics by Dr. Marwan Abou-Pass, from the University of Southern California. The luncheon is sponsored by the Alberta Dental Association, and will feature representatives from the Association. The second day's festivities end with the President's Ball.

Canada Day, July 1, is the last day of the Pacific Dental Conference, and the only scheduled event is a Farewell Brunch.

Many door prizes can be won by delegates, including a painting by a local artist. In addition, a draw will be held in which some lucky delegate will win a trip for two to Shanghai.

Canadian Pacific Airlines is the official carrier for the Conference, and bookings can be made by telephoning, toll free, 1-800-268-4704.

The President of the Pacific Dental Federation is Dr. Gilbert Utas, a past-president of the CDA. President of the Alberta Dental Association is Dr. John Aitken. Dr. Bruno Martinello serves both organizations, as first vice-President of the Federation and Executive Director of the Association. This is one of the first occasions when the Pacific Dental Conference has been held in Canada.

In conjunction with the Conference, the Alberta Dental Assistants Association is also holding their annual meeting. Their meeting is being held at the Rimrock Inn, although the first day's speaker, Dr. David Garber, is shared by both the Pacific Dental Conference delegates and the Alberta Dental Assistants Association. On June 30, the Assistants Association program will feature, at the Rimrock Inn, a choice of two speakers. Dr. B. Gorman will be speaking on "Stress and Coping in Today's World," while Caron Reed will present an "Update on the Hearing Impaired." That same day, the afternoon presentation will continue with Dr. Gorman, or Assistants may choose to attend a talk by Joanne Clovis who will give an "Update on Fluoride and Prevention."

For inquiries on the Pacific Dental Conference, contact Dr. Neil Zaharichuk, 401-4600 Crowchild Trail N.W., Calgary, Alberta, 403-286-2600. Dental Assistants wishing more information may contact: Mrs. Joanne Braaten, #6 Ranch Estates Drive, N.W., Calgary, Alberta, T3G 2A6.



## CONCURRENT MEETINGS: CDA CONVENTION — LES JOURNÉES DENTAIRES 1987

The annual meetings of two international dental organizations are being held in May, concurrently with the joint CDA Convention and Les Journées Dentaires 1987, in Montreal.

The Academy of Dentistry International will hold the annual meeting of the Canadian Section on May 23, 1987. The Canadian Fellowship convocation ceremony will be held the following evening, on Sunday, May 24, 1987 at the Ritz-Carleton Hotel in Montreal. An honorary fellowship will be bestowed upon Dr. Jean-Paul Lussier, former Dean of dentistry at the Université de Montréal.

The Honourable Monique Landry, Minister for External Relations will be the guest speaker at the Academy's annual luncheon on Sunday.

The Academy of Dentistry International is an honorary professional organization of dentists dedicated to sharing knowledge in order to serve the dental health needs and improve the quality of life of people throughout the world.

### Pierre Fauchard Academy

The Pierre Fauchard Academy will be holding their annual Breakfast once again this year, on Tuesday, May 26, 1987 at the Ritz-Carleton Hotel.

At this year's Breakfast, Dr. Ronald E. Jordan, Associate Dean of Clinical Affairs, Faculty of Dentistry at the University of Western Ontario, will be the recipient of the Elmer S. Best Memorial Award. The Award, named for the founder of the Pierre Fauchard Academy, is presented to a member of the dental profession from outside the United States who has made distinguished contributions of international significance to dentistry. Dr. Jordan is well known for his contributions in the field of restorative dentistry.

The International President of the Pierre Fauchard Academy will be addressing the gathering at the Breakfast.

Dr. Clyde Covit, a past-President of the Canadian Dental Association is chairman of local arrangements for the Academy of Dentistry International and Chairman of the Pierre Fauchard Academy for the Province of Quebec. He played a large part in organizing both of these concurrent meetings. For more information on either of these events contact Dr. Clyde Covit,

550 Boul. Décarie, Suite 200,  
Montréal, Québec, H4L 3K9,  
514-747-3565.



## CANADIAN DENTAL ASSOCIATION CONVENTION

IN CONJUNCTION WITH  
*les journées dentaires 1987*

Michel Jahjah, D.D.S.  
General Chairman

## CDA IN MONTREAL . . . COUNTDOWN

Another month has already flown by and we are now only two short months away from . . . RENDEZ-VOUS '87. The **countdown** has begun!

It takes courage to broach the subject of sex as openly as Dr. Domeena Renshaw has been doing for the past five years in her lectures to dental and other health professionals across North America. Dr. Renshaw's matter-of-fact approach is greatly appreciated by her audience that takes an active part in the discussions during the question and answer period. The Committee at one point in time was reluctant to include this topic in the scientific program; however, this year, we felt that we were all ready to "join the crowd". This lecture is also part of the Spouses' Program.

You may be wondering what the other activities of the Spouses' Program will be. Well, with the wide range of events being held simultaneously in Montreal, we decided to give the Welcoming Committee the role of "personal advisors". These key members will be available at all times to help the spouses organize a personalized daily program, in keeping with their own pace, based on their individual preferences. A word of advice from the "advisors": don't forget your credit cards!

And while we are on the subject of the scientific program, there has been a new addition. Dr. John Sterrett, from Dalhousie University, along with Drs. Ken Abramovitch, Crawford Bain and Jack Gerrow, will present a research clinic on Wednesday, May 27th, in the afternoon.

The panel on capitation on Tuesday, May 26th, will now have a fourth panelist — he is Ken Davis from Toronto.

And, after the additions, comes a disappointment! Prof. François Duret was to bring his equipment and do a "live" presentation on the computerized fabrication of a crown. To our knowledge, it would have been a "first". Unfortunately, Prof. Duret has now informed us that due to complications regarding transportation and customs, he is not able to bring his equipment to Montreal. Hence, the decision to cancel the presentation.

Have you ever stopped to think how important exhibitors are to a convention? In addition to the exhibits' scientific, educational and commercial content, exhibitors greatly contribute to the general convention costs through their booth rental fees. Some of them go one step further and help subsidize costs pertaining to specific convention activities. Our heartfelt thanks, therefore, are extended to Canada Dentaire/Denco, The L.D. Caulk Co. of Canada, Dépôt Dentaire (Canada) Limitée, Exan Computer Systems and Services Ltd., Hoechst Canada Inc., and Servident-Ash Temple Ltée, for their support. May I also take this opportunity to thank AIR CANADA for their generosity in providing two international tickets for the Early-Bird Draw.

Contracts have now been signed with the orchestras for the two social evenings. At the Presidents' Ball on Tuesday, you will dine to the music of the Nat Raider Orchestra. This famous orchestra has accompanied Tony Bennett and has recently played for the Ice Capades and the "Evita" and "South Pacific" productions at Montreal's Place des Arts. The musicians promise they will play each and every one of your "favourite" tunes! By the way, it will be a "black tie" (optional) evening. The Serge Galarneau Orchestra has guaranteed non-stop music at the Rendez-Vous '87 Evening on Wednesday night. The Quizz, a "Top 40" trio, will also be on hand to help you "warm up" to this informal and fun "Rendez-Vous"!

And, the planning goes on!

Until next month for more . . . and more information on RENDEZ-VOUS '87.



**CANADIAN DENTAL  
ASSOCIATION CONVENTION**  
in conjunction with les journées dentaires 1987

**MAY 24 — 28**  
**CONVENTION CENTRE MONTRÉAL**



JOINT CONVENTION OF THE CANADIAN DENTAL ASSOCIATION  
AND THE ORDER OF DENTISTS OF QUEBEC





# CANADIAN DENTAL ASSOCIATION CONVENTION IN CONJUNCTION WITH *les journées dentaires 1987*

SUNDAY, MAY 24 – THURSDAY, MAY 28

MONTREAL CONVENTION CENTRE

Montreal, Quebec

PRE-CONVENTION LIMITED ATTENDANCE COURSES

## SUNDAY, MAY 24



FRANK FAUNCE, D.D.S.  
Atlanta (Georgia)

9:00 – 12:00 a.m.

1:30 – 4:30 p.m.

### GLASS RESTORATIONS IN CURRENT AESTHETIC DENTISTRY

- I. An introduction to glass materials being used in clinical dentistry
  - A. Composite resin systems – an update
    1. Restorations
    2. Bonding or cementation of inlays, onlays and laminate veneers
  - B. Laminate veneer systems
    1. Acrylic
    2. Composite
    3. Porcelain
    4. Ceramic
  - C. Inlays and onlays
    1. Composite
    2. Porcelain
    3. Ceramic
- II. Color systems for glass restorations
  - A. Color optics
    1. How color works
    2. Color systems
      - a. Composites
      - b. Porcelain
      - c. Ceramic
  - B. Use of color systems clinically
- III. Clinical techniques
  - A. Laminate veneers of porcelain and ceramic
  - B. Inlays and onlays of porcelain and ceramic
  - C. Composite build-ups
- IV. Summary – questions and answers

The presentation on glass systems currently in use for aesthetic dentistry concentrates on the practical application of basic science theory in modern dental practice. The presentation gives an update on the state of the clinical art with composite resins as well as porcelain veneer clinical applications. The program is designed to take the mystery out of the use of these latest materials and relate their use in everyday dentistry.

### HANDS ON COURSE

#### PREDICTABLE ENDODONTICS FOR THE GENERAL PRACTITIONER

Instructor: Dr. Bernard H. Dolansky, Ottawa (Ontario)  
et al

Theory: 8:30 – 12:00 a.m.

Practice: 1:30 – 4:30 p.m.

(also available in French on the same day)

The subject matter will deal with case selection and diagnosis on a strictly clinical basis. The emphasis is on PREDICTING problems before they occur. We will also discuss emergency procedures and again the message conveyed is how to make a quick accurate diagnosis that allows us to institute a treatment yielding predictable relief. The final half of the didactic presentation will concentrate on the preparation of root canals quickly and easily to allow for the latero-vertical condensation of gutta percha.

Attendance in this hands on course is limited to ensure that each participant receives the highly individualized instruction necessary to improve performance in this important area, with attention to:

- how to prepare access cavities which make cleansing and shaping easy
- cleansing and shaping techniques that permit easy obturation
- how to avoid common pitfalls and what to do when they occur
- obturation for predictable results

(materials and instruments to be supplied by participants)

RESERVATIONS REQUIRED (see registration form)  
Course limited to 40 participants

AIR CANADA  
CONVENTION CENTRAL



weekdays 9:00 a.m. to 8:00 p.m.  
EDT/EST

Save at least 20% with Air Canada's Convention Fare. Call their toll-free number, identify yourself and your meeting, and the Air Canada Convention Central will do the rest!





# CANADIAN DENTAL ASSOCIATION CONVENTION IN CONJUNCTION WITH *les journées dentaires 1987*

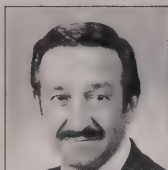
SUNDAY, MAY 24 — THURSDAY, MAY 28

MONTREAL CONVENTION CENTRE

Montreal, Quebec

PRE-CONVENTION LIMITED ATTENDANCE COURSES

## MONDAY, MAY 25



MEL M. TEKAVEC,  
D.D.S., M.A.G.D.  
Pueblo (Colorado)

### THE METAMORPHOSIS IN DENTISTRY

This is a full-day program concerning the many phases of change in practices that are facing dentists today. The following subjects will be addressed in depth:

#### METAMORPHOSIS IN DENTISTRY

Problems Facing Us Today With Solutions

#### INTERNAL MARKETING

Revitalization of Your Present Practice

#### TREATMENT CONFERENCE

The Nine Motivating Factors That Make Patients Say "Yes"

#### TAMING THE INSURANCE MONSTER

Alphabetical — AGED — Mailed Daily for Payment Without a Computer

#### SCHEDULING

Treatment Room Scheduling; Replacing the Inefficient, One Column, Fifteen-Minute Appointment Book

#### PERSONNEL

Job Description  
Salary Survey  
Performance Appraisal  
Team Bonus System

#### FACILITY DESIGN

Tips to Improve Your Present Office Efficiency

#### SOLO GROUP

How To Bring in an Associate and Still Keep Your Individuality  
Dentists are encouraged to bring their entire staff as Dr. Tekavec promises that they will be motivated to implement any needed changes!

## HANDS ON COURSE ESTHETIC TECHNIQUES USING COMPOSITE RESIN BONDING

Instructor: Dr. Denis Robert, Quebec (Quebec)

Theory: 8:30 — 12:00 a.m.

Practice: 1:30 — 4:30 p.m.

Presentation in French only

RESERVATIONS REQUIRED (see registration form) Course limited to 40 participants

CUT AND SEND TO:

CANADIAN DENTAL ASSOCIATION CONVENTION

## *les journées dentaires 1987*

625 Dorchester Blvd. West — 5th Floor  
Montreal, P.Q. H3B 1R2

Cut-off-date:  
**APRIL 24, 1987**

### Hotel Reservation Form

(Please duplicate form if more than one room reservation is required)

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ PROVINCE \_\_\_\_\_

POSTAL CODE \_\_\_\_\_ TELEPHONE (Office) \_\_\_\_\_ (Residence) \_\_\_\_\_

#### HOTEL CHOICE

HOTEL MERIDIEN (Canadian Dental Association/Order of Dentists Convention Headquarters)

☐ Single ..... \$ 91.00 Other (please specify) \_\_\_\_\_  
☐ Double/Twin ..... \$ 91.00 \_\_\_\_\_

#### HOTEL DELTA

☐ Single ..... \$ 85.00 Other (please specify) \_\_\_\_\_  
☐ Double/Twin ..... \$ 85.00 \_\_\_\_\_

#### ARRIVAL TIME AND DATE

#### DEPARTURE DATE

The hotel will confirm reservation directly with delegate. Any subsequent changes to the reservation should be made directly with the hotel.



# CANADIAN DENTAL ASSOCIATION CONVENTION

in conjunction with les journées dentaires 1987  
PRE-CONVENTION

## ADVANCED REGISTRATION FORM

ONE FORM PER PERSON DUPLICATE FOR MULTIPLE REGISTRATIONS

Must be sent with cheque before April 24, 1987. Registration during convention will be increased by \$10.00 each.

NAME \_\_\_\_\_

ADDRESS (Office) \_\_\_\_\_ CITY \_\_\_\_\_

POSTAL CODE \_\_\_\_\_ TELEPHONE No. (Office) \_\_\_\_\_ (Residence) \_\_\_\_\_

PLEASE check appropriate classification:

☐ DENTIST ☐ HYGIENIST ☐ ASSISTANT ☐ ADMINISTRATIVE STAFF ☐ TECHNICIAN ☐ SPOUSE

## PRE-CONVENTION — LIMITED ATTENDANCE COURSES — MAY 24-25

FRANK FAUNCE — RESTORATIVE DENTISTRY (English)

SUNDAY, MAY 24 — 9:00 a.m. to 4:30 p.m.

Dentist ..... \$125.00 \_\_\_\_\_

Auxiliary & Resident ..... \$ 40.00 \_\_\_\_\_

MEL TEKAVEC — PRACTICE MANAGEMENT (English)

MONDAY, MAY 25 — 9:00 a.m. to 4:30 p.m.

Dentist ..... \$125.00 \_\_\_\_\_

Auxiliary & Resident ..... \$ 40.00 \_\_\_\_\_

HANDS ON — ENDODONTICS

SUNDAY, MAY 24 — 8:30 a.m. to 4:30 p.m.

☐ in English

☐ in French

Dentist ..... \$150.00 \_\_\_\_\_

HANDS ON — MATÉRIAUX ESTHÉTIQUES (French)

MONDAY, MAY 25 — 8:30 a.m. to 4:30 p.m.

Dentist ..... \$150.00 \_\_\_\_\_

## CONVENTION — MAY 26, 27 AND 28

Dentist - licensed outside Quebec:

CDA member/ADA member/foreign dentist ..... \$150.00 \_\_\_\_\_

CDA non-member ..... \$275.00 \_\_\_\_\_

Dentist - member of the Order of Dentists of Quebec ..... nil \_\_\_\_\_

**Includes:** access to scientific sessions, technical exhibits,  
Rendez-vous '87 Evening

Hygienist - member C.P.H.D.Q. & outside of Quebec ..... \$ 50.00 \_\_\_\_\_

- non-member C P H D Q ..... \$ 75.00 \_\_\_\_\_

Assistant ..... \$ 45.00 \_\_\_\_\_

Administrative Staff ..... \$ 45.00 \_\_\_\_\_

Technician/membre C P T.D Q ..... \$ 50.00 \_\_\_\_\_

Spouse ..... \$ 40.00 \_\_\_\_\_

**Includes:** access to scientific sessions, technical exhibits,  
three lunches, Rendez-vous '87 Evening

Heart-Saver Course with certification (limited to 36 persons) ..... \$ 15.00 \_\_\_\_\_

☐ in English Tuesday, May 26

☐ in French Wednesday, May 27

Health Assessment Clinic (dentists only) — See Preliminary Program ..... \$ 50.00 payable on site

☐ YES - Please schedule an appointment on May 26 or May 27

Students — On-site registration only

## SOCIAL PROGRAM

TUESDAY, MAY 26 — 7:00 p.m. to Midnight

PRESIDENTS' BALL and CASINO EVENING - Meridien Hotel ..... (per person) \$ 50.00 \_\_\_\_\_

WEDNESDAY, MAY 27 — 9:00 p.m. to 2:00 a.m.

RENDEZ-VOUS '87 EVENING - Meridien Hotel ..... nil \_\_\_\_\_

PLEASE make cheque payable to: LES JOURNÉES DENTAIRE

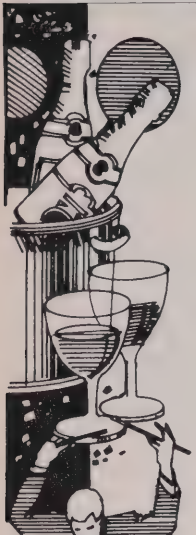
TOTAL \_\_\_\_\_

625 Dorchester Blvd. West, 5th Floor, Montreal QC H3B 1R2

Tel.: (514) 875-8511

CANCELLATION POLICY Cancellation before April 24 full refund  
Cancellation after April 24 subject to a 25% administrative charge  
Cancellation after May 18 no refund





# PRESIDENTS' BALL... AND CASINO EVENING

DINNER • DANCING... AND A CASINO!

NAT RAIDER & HIS ORCHESTRA

Meridien Hotel  
Tuesday, May 26  
7:00 p.m. to midnight

*Reservations required (see Registration Form)*

## RENDEZ-VOUS '87 EVENING

Meridien Hotel  
Wednesday, May 27 9:00 p.m. – 2:00 a.m.

JOIN US FOR THIS SUPER EVENING  
WITH NON-STOP DANCING!

Serge Galarneau & His Orchestra and The Quizz  
Bar  
*(no reservations)*





## PRE-CONVENTION

Dentists, Hygienists, Assistants, Technicians, Administrative Staff and Spouses are invited to all programs from Tuesday, May 26th to Thursday, May 28th.

A) English/Anglais (F) French/Français \*Simultaneous Translation/Traduction simultanée



# Good For Life™ DENTAL AWARENESS PROGRAM UPDATE

April is Dental Health Month — and this year, with *The Good for Life Pledge*, we're not only building on the solid foundations of last year's information-based programming, we're shifting the focus of our promotional activities from simple awareness into action. Our goal: to get a million Canadians from coast to coast to make a conscious, deliberate commitment to do what it takes to keep their dental health *Good for Life*.

## The Pledge in the Community: Planning and Resource Materials

In planning Dental Health Month 1987, CDA has made a conscious effort to follow through on last year's move to encourage and facilitate involvement from organized dentistry at all levels — provincial associations, local dental societies, and public health units. To work with the essential material in the permanent Dental Health Month planning kit, we've created a special organizers' supplement for 1987.

The '87 supplement relates specifically to *The Good for Life Pledge*. It includes the following array of *Good for Life* resources:

### Guide to Community Projects

An organizer's guide to special Pledge-related events, many involving little or no expense. As well as offering suggestions for incorporating the Pledge into well-established Dental Health Month activities, we've provided step-by-step guidelines for completely new events directly involving the Pledge:

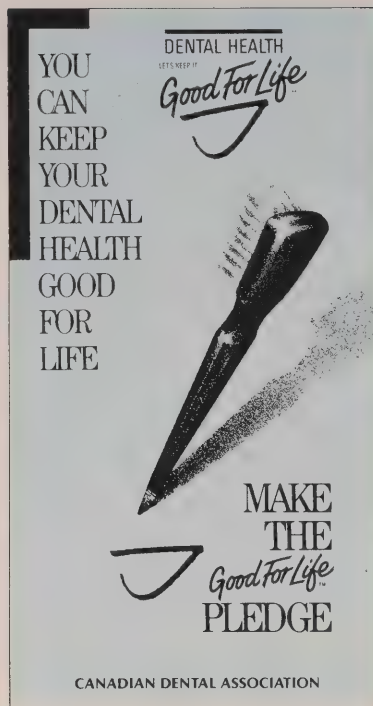
- Celebrity Signup
- The Pledge Phone-In
- Workplace Signup and Display

### Model Press Release

A sample Pledge press release to demonstrate appropriate format and style and to provide useful ideas for community organizers to use when notifying the media about their own activities.

### Media Relations Advice

Suggestions and advice on enlisting media cooperation for Pledge-related activities. Includes special guidelines for making the most of radio.



### Pledge Interview Outline

Helpful points and phrases to serve as an outline or framework for explaining the Pledge during public talks and interviews.

### Pledge Certificate and Fact Sheet

Not only for in-office distribution, these attractive, easy-to-photocopy resources can be handed out at community events or reproduced in local newspapers. Both can be reproduced in whatever quantities you need. The Fact Sheet explains the hows and whys of making the Pledge; the Certificate (suitable for framing) is what people actually sign to make the Pledge.

### Checkup Checks in... Again

Since the launch of the Dental Awareness Program in 1985, a major public-education feature of Dental Health Month has been the

National Dental Health Checkup — a bright, 12-page publication featuring test-yourself questions and answers about dental health.

The first Checkup, distributed as a supplement to *Maclean's* magazine as well as through dental offices and promotional events, reached an estimated 4,000,000 Canadians. 1986's Second National Dental Checkup, distributed in *Chatelaine* to even more households, focussed on adult issues and concerns. It achieved phenomenal recall results when market-tested by *Chatelaine's* research department — 83 per cent of readers remembered the Checkup, and one out of every three readers tore it out of the magazine and saved it for future reference.

This year we're doing it again — and the Third Dental Health Checkup is visually and graphically more exciting than ever. Again, we'll be distributing household copies through *Chatelaine* magazine. A new departure: we'll be using the 1987 Checkup as a key vehicle for media opportunities — challenging talk-show hosts to take the Checkup themselves and to discuss the answers with a friendly dental spokesperson.

CDA thanks Colgate for once again coming through with the sponsorship money to make the Checkup possible.

## "Every Adult"... Still Breaking Records

In the last DAP Update, we reported that "What Every Adult Should Know About Dental Health", DAP's colour-packed fold-out pamphlet, was selling like hotcakes. That was only half the story.

Says CDA's information officer Kimberley Allen, "Orders were coming in so fast that we've had to hire a student to fulfill them. He's been mailing out 30,000 a day! We're completely sold out — and that's from the membership-renewal offer alone, never mind the Dental Health Month orders." Right now, we're trying to decide if we can print another run of them."

Whoever said periodontal disease wasn't bestseller material?



# Briefly



Dr. Charles J. Burstone

The presenter of this year's George Wellington Grieve Memorial Lecture at the joint CDA/ODQ Convention in Montréal, will be Dr. Charles J. Burstone, Professor and Head, Department of Orthodontics, School of Dental Medicine, University of Connecticut, in Farmington, Connecticut. Dr. Burstone will speak on "New

Developments in the Application of Biomechanics to Clinical Orthodontics."

The lecture, which will be presented between 9 and 11.30 a.m. on Thursday, May 28 will consider recent developments in the treatment of orthodontic patients using force-driven orthodontic appliances. The future implications of biomechanics in orthodontics will be discussed.

The College of Dental Surgeons of Saskatchewan will bestow Life Memberships on two of its long time members at the annual convention in North Battleford, June 11-13, next.

Dr. Cecil Jamieson of Moosomin and Dr. Russell Partridge of Prince Albert will be the recipients of the honors. Both were registered with the Saskatchewan College 50 years ago.

Dr. John W. MacKay of Saskatoon, will also be honored by the College on that occasion. He will receive an Honorary Life Membership.

Dr. MacKay was a member of the CDA Board of Governors from 1976 to 1981. He also served as a member of the Executive

Council from 1979 to 1981. Other CDA bodies to enjoy his counsel and guidance were the Council on Dental Services and the Council on Dental Care, from 1972 to 1976.

He was also a council member and is a past-president of the College of Dental Surgeons of Saskatchewan.

Dr. MacKay has also served as a part time staff member of the University of Saskatchewan College of Dentistry.

The Royal College of Dentists of Canada recently held their Fellowship and Membership Examinations.

A total number of 11 specialists were granted Membership in the College, while six dental specialists achieved Fellowship status.

The new Fellows and Members will be formally admitted to the College at the Convocation to be held in Toronto, September 19, 1987.

The Care Dental Centre in Medicine Hat, Alberta celebrated Valentine's Day in a heartfelt way in February.

The staff and dental practitioners donated their time to provide free treatment to anyone unable to receive regular dental care. From 9:00 a.m. to 3:00 p.m. on February 14, the office provided care under the following guidelines: patients were seen on a first come-first served basis: there were no appointments. No laboratory work was done on that day. Children had to be accompanied by a parent or guardian and there was no pressure or obligation to continue further treatment.

Dr. K. Ewasechko, one of the partners in the practice told the Journal that the Valentine's Day venture was a success, with about 20 patients being treated.

"We did mostly extractions and fillings, as well as some dental emergency work. Many of the families which we treated had never received any dental care at all and we are hoping that they will return for follow-up, although there was no pressure put on them to return," said Dr. Ewasechko.

Plans are currently underway to provide the same services next Valentine's Day.

"We're hoping that perhaps some other dentists in town will also be doing a similar thing for Valentine's Day next year in their own practices," Dr. Ewasechko said.

The International College of Dentists, Canadian Section, inducted the 1986 Class

in Halifax, Nova Scotia, in August of 1986. The photograph shows the 1986 Class.



Front Row: Left to Right Fellows: C.B. Allaby, W.D.M. Beaton, President L.G. Mandin, Registrar W.J. Spence, Fellows: J.F. Begin, J.S. Brown. Second Row: Left to Right Fellows: G.M.D. Conrad, S. Golden, J.L. Hornibrook, R.J. Markey, K.R. Morley. Third Row: Fellows: G.N. Nye, L.V. Taylor, E.S. Thompson, W.B. Wiseman, S. Yaholnitsky, P.P. Zackarow.



**British Columbia's Premier Bill Vander Zalm** has named a newly-elected MLA, Peter Dueck, as that province's new health minister.

The premier has also announced that one of the new health minister's major responsibilities will be to conduct a full-scale review of that ministry's programs, to be completed by July 31 next.

Mr. Dueck has told the press that he wants to emphasize preventive medicine. The College of Dental Surgeons of British Columbia sees this emphasis as a possible opportunity to bring to the minister's attention the importance of dentistry's contribution.

The College hoped that Bill 26, the Dentists Amendment Act, would reappear on the Legislature's order paper. That legislation was the result of a great deal of consultation and is considered highly important to both the dental profession and the general public of British Columbia.

**A new public health specialty group** is gaining interest and support in the United States.

The American Academy of Head, Facial and Neck Pain, and Temporomandibular Joint Orthopaedics, was founded about 18 months ago in Philadelphia, for the purpose of seeking specialty status for those whose main professional interest is in the clinical treatment of head, neck and facial pain patients.

The organization points out that it is not a research oriented body, with the exception of that research that is directly applicable to the clinical treatment of patients.

The Academy's major thrust is the development and dissemination of the latest and most effective methods of medical, dental, pharmacological and physical medicine modalities on this specific group of patients, to its members.

**The Academy of General Dentistry** is offering their quarterly media newsletter "Dentalnotes" for sale by subscription to individual dentists in the U.S. and Canada.

The newsletter is distributed to more than 250 media in the U.S. including national consumer magazines, such as Redbook and Family Circle. "Dentalnotes" specializes in brief articles on dental trends, targeted specifically to the dental patient.

The subscription price is \$6.00 U.S. for the four-issue quarterly. Dentalnotes may be ordered by contacting, *Academy of General Dentistry, Public Information Manager, 211 E. Chicago Avenue, Suite 1200, Chicago, Ill. 60611 or telephone 312-440-4300, ext. 357.*

**At a recent meeting of the American Association of Public Health Dentistry**, three prominent Canadian public health dentists presented information on public health dental programs in their provinces.

Dr. David Johnston, with the Department of Community Dentistry at the University of Western Ontario, spoke on Ontario programs. Dr. Roger Ellis, President of the Canadian Society of Public Health Dentists, and an academic with the Department of Dental Health Care at the University of Alberta, presented the gathering with information on Alberta's public health dental programs. Dr. Sharat Doshi, Dental Director with the Department of Health, Government of Newfoundland and Labrador, told delegates of the dental programs available in Newfoundland.

The meeting, which was held in Miami, was attended by 170 delegates and also featured several papers of interest to public health dentists. The Association also put forward a document entitled "Report on the Mid-Course Review of the Fluoridation and Dental Health 1990 Objectives for the Nation." This report describes in detail 12 specific objectives in the area of fluoridation and dental health, which are to be achieved by 1990 or earlier.

The next meeting of the Association will be held in Las Vegas, later this year.

**Some hard statistical evidence** is available in Australia to convince those down under of the need for dental awareness.

Figures recently made available from the 1983 Australian Health Survey reveal that of 544,900 people in that country who had suffered from dental problems in a two-week period prior to the survey, 68,200 admitted that their problem was severe enough to impair their normal activities.

A further breakdown of the statistics revealed that about 5,700 of these sufferers had spent some days in bed because of their dental affliction. This figure excluded patients in hospitals for such reasons as the removal of wisdom teeth. Another 6,000 Australian people had "days of reduced activity."

"Now we have data to show that dental disease *does* affect people's lives in a significant way," noted Dr. Colin H. Wall, Executive Director of the Australian Dental Association.

## CDA RETIREMENT SAVINGS PLAN

Unit values: (Funds are valued weekly)

| Fund              | Unit values as at |                  |
|-------------------|-------------------|------------------|
|                   | February 27, 1987 | January 30, 1987 |
| Fixed Income Fund | 57.08960          | 57.07885         |
| Common Stock Fund | 126.75655         | 131.07010        |
| Money Market Fund | 36.97248          | 36.77788         |
| Balanced Fund     | 24.51946          | 23.99276         |

Interest rates:

| Guaranteed Fund Term | Interest rates as at |                  |
|----------------------|----------------------|------------------|
|                      | February 23, 1987    | January 30, 1987 |
| 1 yr                 | 8.20%                | 7.95%            |
| 2 yr                 | 8.85%                | 8.70%            |
| 3 yr                 | 9.30%                | 9.20%            |
| 4 yr                 | 9.30%                | 9.20%            |
| 5 yr                 | 9.50%                | 9.45%            |

(\*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

| February 27, 1987 | January 30, 1987 |
|-------------------|------------------|
| \$74,325,805      | \$69,775,985     |

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# Resource Centre de documentation

## SMOKELESS TOBACCO

### LE TABAC À MÂCHER ET À PRISER

1. Belanger, G.K. and Poulson, T.C. *Smokeless tobacco: a potential health hazard for children*. Pediatric Dentistry, v. 5, no. 4, December 1983, pp. 266-269.
2. Giunta, J.L. and Connolly, G. *The reversibility of leukoplakia caused by smokeless tobacco*. Journal of the American Dental Association, v. 113, no. 1, July 1986, pp. 50-52.

#### Abstract:

This case describes an instance of reversibility of bilateral mucosal leukoplakic lesions caused by the long-term use of smokeless tobacco. The dentist should recognize the lesion, advise the patient to stop the tobacco usage, observe the reversibility of the lesion, and assist the patient in stopping the tobacco habit permanently.

3. Goepferd, S.J. *Smokeless tobacco: a potential hazard to infants and children*. Journal of the American Dental Association, v. 113, no. 1, July 1986, pp. 49-50.

#### Abstract:

During the past several years, there has been a growing interest and concern relative to the increased use of smokeless tobacco, especially use among young people. Dentistry is concerned, in particular, with the oral hazards that are associated with smokeless tobacco. Accidental ingestion of poisonous substances is a significant problem among children. A case is reported illustrating the potential hazard of nicotine poisoning in an infant that resulted from an accidental ingestion of a smokeless tobacco-related product.

4. Gross, J.Y. *Oral tobacco: another cause for dizziness*. Southern Medical Journal, v. 77, no. 6, June 1984, pp. 772-774.
5. Hall, E.H. and Terezhalmay, G.T. *Oral manifestations of the smokeless tobacco habit*. U.S. Navy Medicine, v. 75, no. 3, May-June 1984, pp. 4-6.
6. Hirsch, J.M. and Johansson, S.L. *Effect of long-term application of snuff on the oral mucosa: an experimental study in the rat*. Journal of Oral Pathology, v. 12, no. 3, June 1983, pp. 187-198.
7. Hoge, H.W. and Kirkham, D.B. *Clinical management and tissue reconstruction*

*of the periodontal damage resulting from habitual use of snuff*. Journal of the American Dental Association, v. 107, no. 5, November 1983, pp. 744-745.

8. Massey, J.D. and others. *Smokeless tobacco: a risk factor in oral cancer*. Ear, Nose and Throat Journal, v. 63, no. 9, September 1984, pp. 453-458.
9. McGuirt, W.F. *Snuff dipper's carcinoma*. Archives of Otolaryngology, v. 109, no. 11, November 1983, pp. 757-760.
10. Offenbacher, S. and Weathers, D.R. *Effects of smokeless tobacco on the periodontal, mucosal and caries status of adolescent males*. Journal of Oral Pathology, v. 14, no. 2, February 1985, pp. 169-181.
11. Sanzi-Schaedel, S. *How can dentistry impact smokeless tobacco use?* Journal of the Oregon Dental Association, v. 56, no. 1, Fall 1986, pp. 24-27.
12. Silverman, S., Jr., Gorsky, M. and Lozada, F. *Oral leukoplakia and malignant transformation. A follow-up study of 257 patients*. Cancer, v. 53, no. 3, February 1, 1984, pp. 563-568.

*One copy of the above articles is available at no charge from the library to all CDA members. Non-members will be charged \$5. This bibliography was generated with the help of MEDLARS.*

## OBITUARIES/ NÉCROLOGIES

**BANKS, E.M.:** A graduate of Dalhousie in 1950, Dr. Banks was born in 1924. He was a resident of Whitehorse, Yukon, at the time of his death.

**BROSSEAU, E.:** Né en 1895 et diplômé de l'Université de Montréal en 1923, le Dr Brosseau habitait à Granby (Québec) au moment de son décès.

**DAVIS, L.:** A resident of Thornhill, Ontario, at the time of his death, Dr. Davis graduated from the University of Toronto in 1929. He was born in 1905.

**DRESEN, E.H.:** Born in 1920, Dr. Dresen graduated from the University of Alberta in 1953. He practiced in Edmon-

*La bibliothèque de l'ADC offre gratuitement à ses membres et pour \$5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS.*

## LIBRARY ACQUISITIONS

### TITRES EN BIBLIOTHÈQUE

The following current acquisitions are available on loan from the Resource Centre/Library.

Les titres indiqués ci-dessous sont maintenant disponibles à la bibliothèque/centre de documentation de l'ADC.

Health and Welfare Canada.

*Dental care Programs in Canada: Historical Development, Current Status and Future Directions*. Ottawa: Minister of Supply and Services, 1986, 165 p. 1 copy.

## MISCELLANEOUS

The classified section of the Journal of the Canadian Dental Association is especially for you the dentist (not for commercial businesses). Take advantage of this marketplace to give you the results you want.

ton, and was a resident of Spruce Grove, Alberta, at the time of his death.

**DUNCAN, J.C.:** A resident of Burlington, Ontario, at the time of his death, Dr. Duncan graduated from the University of Toronto in 1958.

**McKEE, A.D.:** A graduate of the University of Toronto in 1930, Dr. McKee was born in North Dakota in 1906. He practiced in Dauphin, Manitoba, and resided there until the time of his death.

**ROBICHAUD, M.:** Né en 1916 et diplômé de l'Université de Montréal de 1946, le Dr Robichaud habitait à Montréal et faisait partie du corps professoral de l'Université de Montréal au moment de son décès.



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# Letters

## "THE MERCURY SCARE"

I'm writing about the "Mercury Scare" article which appeared in the Nov-86 CDA journal. I was surprised and disappointed to see this article in our journal, since I've devoted a lot of time researching this entire issue and I can hardly agree with your endorsement of this incomplete type of investigation.

I certainly don't want to remove everyone's fillings containing mercury and I don't purport to treat health problems by "ripping out" fillings, but I do believe modern dentistry has to stop placing mercury in

people's mouths now that we know without doubt that it does escape into the body, that it does lower T-lymphocyte counts, that it is extremely poisonous, that it accumulates in neural tissue, that TLV's have never been established adequately, that body burden is not measurable by blood or urine levels. Remember that "toxic" or "parsarous", refers to "everybody" while "sensitive" refers to only a few people — this last classification system being used to minimize the apparent effects on the population.

Please refer to the September 1986 issue of the Bioprobe newsletter, published by Bioprobe Inc., for a review of the con-

sumers' article. I would recommend that you make a sincere and honest effort to get all the facts — write to Bioprobe for back issues reporting fully referenced and documented research articles from around the world — tapes are also available. I would be willing to help in any way I can. Wouldn't it be courageous of the CDA to take a stand and publish some of these bona-fide university directed studies, taking the initiative on its own, instead of hiding under the skirts of the ADA position. A skirt is of little protection when a stone wall comes crashing down!

Dr. Barry Faguy  
Pointe Claire, Quebec

Even After Brushing  
With Fluoride,  
Teeth Need  
The Fluoride  
In Listermint.

Here's Clinical  
Evidence.





## THE MERCURY SCARE: COUNCIL CHAIRMAN REPLIES

This is in response to Dr. Faguy's letter on the article entitled, "The Mercury Scare". (JCDA, No. 11, 1986).

The Council on Dental Materials and Devices recommended the publication of the Consumer Union report on dental amalgams, to inform our members on what is happening in the consumer market in North America. This article was widely read and reprinted by some newspapers. The Council felt that, if patients have access to this information, the dentist should also be made aware of it. Not being a subscriber to an American publication is no reason why a dentist should assume that his patients are not influenced by such views.

The Council monitors on a constant basis the problem of mercury in dentistry. The body receives mercury from many sources, i.e. food, environment, dental treatments, etc. and evidence to date suggests that dental sources constitute only a small fraction of the body's daily mercury intake. Eliminating the dental source may not be the answer. Are we receiving "toxic" or "poisonous" doses from our dental fillings that

are causing illnesses in the population? I have not seen any serious, well-documented evidence that this is so.

I also worry that substituting composite resins for amalgam fillings may not be the solution. Placement of a polymer/silica material containing many chemical activators that is known to wear away at a rate of 40 micrometers or so per year, is not that good an answer. One might well ask the question "What are the effects of the absorption of oligomers or other chemical activators from our polymeric materials on the body?"

It is important to emphasize that the primary responsibility for the selection of any restorative material lies with the dentist. It is not the responsibility of the national or provincial Association. Any Association can only try and represent the collective views of its members, and keep its members informed of the risks or benefits of any type of treatment. Each individual dentist, however, must weigh both the risks and the benefits of any treatment. If only risks were considered, neither penicillin nor x-rays would ever be used.

The Council is not hiding under anyone's skirts. It has the same opinion as all the North American dental schools, all the North American professional dental socie-

ties and most, if not all, of the dental schools in the world. We have gone on record in the Journal with our opinions. But, we also have an open mind on the subject. Any studies that are submitted to the Council will be evaluated in depth and commented on. We don't profess to have all the information on the subject and are quite receptive to receiving serious, well-documented and well-researched studies, on this or any other subject.

Ralph Y. Barolet, DDS, MSD  
Chairman,  
Council on Dental Materials and Devices

## "A MORAL AND DENTAL DILEMMA" — REBUTTAL

I want to rebut Dr. Hardie's loud lament, contained in the January editorial, that the profession's ethical values are presently going out the window. Specifically, he charges that young dentists don't care for their patients, and perhaps worse than any of the other changes that bother him, those new-fangled mall centres mean that hucksterism has overtaken dentistry.

First of all, I want to state that I have been involved with associate dentists all my practicing life, and find the present crop of new

"My patients get plenty of fluoride from brushing and other sources. Why on earth would I recommend a fluoride rinse?" We understand your doubts. But the accumulation of evidence from independent clinical studies\* has become so persuasive, we believe it will overcome your skepticism.

## EVIDENCE OF ADDED PROTECTION.

Reviews of numerous independent studies<sup>1,2,3</sup> have concluded that a fluoride rinse enhances the (caries-reducing) effects of fluoride dentifrice. Additionally, repeated applications increase prophylactic value. Studies have also shown<sup>4</sup> that a fluoride rinse reduces caries among people receiving optimal water fluoridation.

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to work the same way.<sup>5</sup> It acts to accelerate the remineralization of white spot lesions, reversing the demineralization process.

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\*Please contact the Director of Professional Services Warner-Lambert Canada Inc., 2200 Eglinton Ave. E., Scarborough, Ontario M1L 2N3.

\*\*neutral pH, 0.22 mg/mL of sodium fluoride (100 ppm fluoride ion) 1. Torell, P.; Ericsson, Y.: Int'l workshop on ill/dental caries red. (1974). 2. Ripa, L.W. JADA 102:477-481 (1981). 3. Birkeland, J.M.; Torell, P.; Canes Res 12 (Suppl 1): 38-51 (1978). 4. Driscoll, W.S.; Swango, P.A.; Horowitz, A.M.; Kingman, A. JADA 105:1010-1013 (1982). 5. Koulourides, T. Data on file Warner-Lambert Canada Inc. 1985.

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graduates to be every bit as compassionate and actively-caring as their predecessors of 25 years ago. Secondly, since I taught the Ethics course in the Dalhousie dental school for 5 years, maybe I know something about ethics. I am also familiar with Mall Dentistry as I opened a mall centre in 1983 and last year accepted an invitation from Tridont to have my centre join their coast to coast family of mall centres.

I want to make it clear that I recognize mall centres are not the only way dentistry can be practised. I respect the fact at all times the public enjoys the free choice of attending a mall centre or a traditional office. But I do believe Dr. Hardie is dead wrong in branding mall centres with the label of hucksterism. He bewails today's consumer-oriented world in which the public purchases dental services in the same spirit as they purchase "automobiles, furniture, and real estate". He correctly identifies a shift in the value structure of society — often described as "consumerism". Speaking generally, if an individual or professional group does not adapt to changing circumstances with intelligence and sensitivity — it dies. For those of us out there in the front line having to eyeball patients, often new to dentistry but old acquaintances with consumerism, a need for us to be more open about costs of treatment has emerged.

That is what society wants today, and society gets annoyed if we don't practise it. I see nothing unethical in this. Consumerism has not undermined the historic attitude of compassion by dentists towards their patients. Last year the Ottawa Citizen reported how a patient in pain, but without money, failed to obtain service from over twenty traditional offices in the city. No receptionist would give that patient an appointment. Only a mall centre receptionist agreed to have the patient come and be treated without immediate payment. I cite this example, not to criticize traditional offices in Ottawa, but to substantiate the fact that mall centres, which function in the commercial environment Dr. Hardie finds abhorrent, can also be compassionate.

But mall centres have characteristics which strengthen our profession. The fact that these characteristics are different from the past does not make them undesirable. For example, graduates straight from dental school can join a centre, learn about practice from experienced colleagues and proceed to partnership in the centre or leave for a traditional office. By virtue of each centre being a group practice, an unofficial peer review system works automatically, since I believe it is normal for dentists to want the approval of colleagues for the quality of our individual treatment.

Thirdly, an enduring problem in tradi-

tional dentistry has been the career plateau hit by our auxiliaries after a few years of work. They find they cannot continue to develop professionally or grow in responsibility within the office. So most leave dentistry.

Some centres are open 14 hours a day — six days a week. Some are linked administratively from coast to coast. In the coordination of these arrangements auxiliaries have opportunities to rise to positions of considerable responsibility. They can now serve dentistry and therefore society, by actualising their potential to heights undreamt of hitherto.

I may be in a minority of one, but I can't help thinking that these examples of changes in the delivery system associated with mall centres are for the betterment of all dentistry.

I have always kept an eye on the delivery of dentistry in the U.S.A. especially since department store clinics opened in California in the sixties. It seems to me that if we consider the excellent care given in traditional Canadian offices, combined with the services provided by our innovative mall centres, Canada now delivers to the public proportionately more high quality treatment by caring professionals than does any other country in the world. In fact I wouldn't be at all surprised if other countries start to follow our lead.

To sum up, I agree with Dr. Hardie that in recent times, changes in the dental delivery system have occurred. I disagree with him strongly that those changes are all bad.

*Dr. A.E. MacLeod  
Sydney, Nova Scotia*

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| Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5       | Halifax                                              | Pit & Fissure Sealants: A Clinical Course                | Preventive Dentistry | April 25              | Lecture Participation       | Dr. David Richardson & Professor Marnie Forgay          | Open          | \$140 for DDS \$90 for DH              | GPs Hygienists                       | Jean Wood (902) 424-2248 or 6507 |
| Faculty of Dentistry, McGill University, 740 Docteur Penfield Montréal, Qué. H3A 1A4 | Montréal                                             | Osseo-integration Implants: A course in surgical aspects | Implants             | June 10 to 12 Includ. | Lecture Demo. Participation | Dr. Kenneth C. Bentley<br>Dr. Donald Kepron             | Limited to 30 | TBA                                    | Specialists                          | Mrs. Olga Chodan (514) 398-7221  |
| Faculty of Dentistry, McGill University, 740 Docteur Penfield Montréal, Qué. H3A 1A4 | Montréal                                             | Osseo-integration Implants: A course in prosthetics      | Implants             | June 10 to 12 Includ. | Lecture Demo. Participation | Dr. Timothy Head<br>Dr. Eric Millar<br>Dr. Nasser Dibai | Limited to 30 | TBA                                    | GPs Lab. Technicians Prosthodontists | Mrs. Olga Chodan (514) 398-7221  |
| Ontario Dental Association, 234 St. George St., Toronto, Ont. M5R 2P1                | Toronto, Ont.                                        | Confident Pain Control & Dental Emergency Management     | Pain Management      | April 24              | Lecture Participation       | Mel Hawkins                                             | Limited       | \$175 & \$50 for each additional Staff | GPs Assistants Hygienists            | Teresa Fiorini (416) 922-3900    |
| Ontario Dental Association, 234 St. George St., Toronto, Ont. M5R 2P1                | Toronto, Ont.                                        | Participation Course in Local Anaesthesia                | Pain Management      | April 25              | Lecture Participation       | Mel Hawkins                                             | Limited       | \$350                                  | GPs Assistants Hygienists            | Teresa Fiorini (416) 922-3900    |
| Ontario Dental Association, 234 St. George St., Toronto, Ont. M5R 2P1                | Sudbury, Ont. (Repeated in Toronto, Ont. on June 12) | Professional Business Checkup                            | Practice Management  | April 24              | Lecture                     | Tillman Kershaw & Derek Hill                            | Limited       | \$175 & \$50 Additional Staff          | GPs Assistants Hygienists            | Teresa Fiorini (416) 922-3900    |
| Ontario Dental Association, 234 St. George St., Toronto, Ont. M5R 2P1                | Toronto, Ont.                                        | Getting Comfortable with the Computer                    | Computers            | May 6 (Evening)       | Lecture                     | Michael Barrington                                      | Limited       | \$65                                   | GPs Assistants Hygienists            | Teresa Fiorini (416) 922-3900    |



## Continuing Dental Education

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| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Posterior Composites Theory and Clinical Use | Prosthodontics  | May 10 | Lecture Participation | Drs. L. Boksmann, D. McComb, and M. Suzuki | Limited      | \$90 (Lecture only)<br>\$250 (Participation & Lecture) | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Photography in the Dental Practice           | Photography     | May 10 | Lecture Participation | Dr. Ron Goodlin                            | Limited      | \$235 * (includes one auxiliary)                       | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Ultra-sonic Endodontics & Thermal Condensing | Endodontics     | May 11 | Lecture Participation | Dr. Walter Cunningham                      | Limited      | \$235                                                  | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Introduction to Computers                    | Computers       | May 11 | Lecture Participation | Ken Losch                                  | Limited      | \$165                                                  | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Desktop Publishing                           |                 | May 11 | Lecture Participation | Richard & Howard Arfin                     | Limited      | \$165                                                  | GPs<br>Assistants &<br>Hygienists | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Perio 200 Surgical Periodontics              | Periodontics    | May 12 | Lecture Participation | Drs. Gerry Perarson & Eric Freeman         | Limited      | \$250                                                  | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Restoration of Coronally Debilitated Teeth   | Prosthodontics  | May 12 | Lecture Participation | Dr. David Frederick                        | Limited      | \$235                                                  | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |
| Ontario Dental Association,<br>234 St. George St.,<br>Toronto, Ont.<br>M5R 2P1 | Toronto, Ont.      | Medical Risk Management                      | Pain Management | May 29 | Lecture Participation | Kevin Dann                                 | Limited      | \$75 and \$50 each additional Staff                    | GPs<br>Assistants<br>Hygienists   | Teresa Fiorini (416) 922-3900 |

| Sponsoring Institution Address                                                                            | Location of Course              | Title of Course                                              | Subject Area                    | Date          | Style                       | Instructor                                | Registration  | Fee   | Audience                              | Contact person/ Telephone                                 |
|-----------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------|---------------------------------|---------------|-----------------------------|-------------------------------------------|---------------|-------|---------------------------------------|-----------------------------------------------------------|
| Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1                                 | London, Ont.                    | Forensic Dentistry – An Overview                             | Forensic Dentistry/ Sciences    | April 24      | Lecture Demo.               | Dr. S.L. Kogon                            | Limited to 30 | \$75  | GPs                                   | Maureen J. Firmston (519) 679-2111 Ext. 6138              |
| Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1                                 | London, Ont.                    | Occlusion III A Practical Approach to Occlusal Equilibration | Occlusion                       | April 24-25   | Lecture Participation       | Drs. W.R. Teteruck, E.A. Cornish          | Limited to 16 | \$600 | GPs                                   | Maureen J. Firmston (519) 679-2111 Ext. 6138              |
| Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1                                 | London, Ont.                    | Nitrous Oxide Oxygen Conscious Sedation                      | Oral and Maxillo-Facial Surgery | May 21-23     | Lecture Demo. Participation | Drs. I.D.F. Schofield, A.G. Parnell       | Limited to 20 | \$350 | GPs                                   | Maureen J. Firmston (519) 679-2111 Ext. 6138              |
| Faculty of Dentistry, University of Manitoba, 780 Bannatyne Ave., Winnipeg, Man. R3E 0W3                  | Westin Hotel Winnipeg           | Diagnosis and Treatment of Cranio-facial Pain                |                                 | April 24 & 25 | Lecture                     | Dr. Parker Mahan                          | Open          | \$225 | GPs                                   | Karen McLean (204) 788-6331                               |
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta T6G 2N8 | University of Alberta, Edmonton | Endodontic and Prosthodontic Treatment of Compromised Teeth  | Oral Rehabilitation             | April 4, 1987 | Lecture Demo. Participation | Drs. C.E. Hawrish K.H. Compton D.A. Scott | Limited to 40 | TBA   | GPs Specialists                       | Dr. Alex Bene or Ms. Debbie Grant (403) 432-5023 432-8240 |
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta T6G 2N8 | University of Alberta           | Some Current Controversies in Orthodontics                   | Orthodontics                    | April 11      | Lecture                     | Drs. K.E. Glover, W.K. Lobb               | Open          | TBA   | GPs Specialists Hygienists Assistants | Dr. Alex Bene or Ms. Debbie Grant (403) 432-5023 432-8240 |
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta T6G 2N8 | Red Deer, Alberta               | Traditional and New Dental Restorative Materials             | Operative Dentistry             | April 25      | Lecture                     | Drs. W. Youdelis D. Bales G. Johnson      | Open          | TBA   | GPs Specialists Assistants            | Dr. Alex Bene or Ms. Debbie Grant (403) 432-5023 432-8240 |



## Continuing Dental Education

| Sponsoring Institution Address                                                                             | Location of Course              | Title of Course                                                          | Subject Area               | Date                   | Style                       | Instructor                        | Registration  | Fee    | Audience                                       | Contact person/ Telephone                                             |
|------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------|----------------------------|------------------------|-----------------------------|-----------------------------------|---------------|--------|------------------------------------------------|-----------------------------------------------------------------------|
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta, T6G 2N8 | Calgary, Alberta                | Over-the-Counter Dental Care Products: Clinical Efficacy and Client Use. | Dental Materials & Devices | May 9                  | Lecture Demo.               | Ms. B. Zier<br>Ms. J.F. Pimlott   | Open          | TBA    | GPs<br>Specialists<br>Hygienists<br>Assistants | Dr. Alex Bene or<br>Ms. Debbie Grant<br>(403)<br>432-5023<br>432-8240 |
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta, T6G 2N8 | University of Alberta, Edmonton | Conscious Sedation in Dental Practice                                    | Anxiety and Pain Control   | May 25 to 29 (Inclus.) | Lecture Demo. Participation | Dr. B.K. Arora & Associates       | Limited to 16 | \$1000 | GPs<br>Specialists                             | Dr. Alex Bene or<br>Ms. Debbie Grant<br>(403)<br>432-5023<br>432-8240 |
| Faculty of Dentistry, University of Alberta, 4063 Dentistry/ Pharmacy Building, Edmonton, Alberta, T6G 2N8 | University of Alberta, Edmonton | Osseo-integrated Implants in Dentistry – Surgical                        | Oral Rehabilitation        | June 24, 25, 26        | Lecture Demo. Participation | Dr. B.K. Arora<br>Dr. Ulf Lekholm | Limited to 40 | TBA    | Specialists                                    | Dr. Alex Bene or<br>Ms. Debbie Grant<br>(403)<br>432-5023<br>432-8240 |



### UNIVERSITY OF MANITOBA FACULTY OF DENTISTRY HEAD, ORAL AND MAXILLOFACIAL SURGERY

Applications are invited for a full-time tenure stream appointment as Head of the Undergraduate and Graduate Program of Oral and Maxillofacial Surgery at both the Faculty of Dentistry and the Health Sciences Centre. Applicants should have successfully completed graduate training in Oral and Maxillofacial Surgery and be eligible to sit the examinations of the Royal College of Dentists (Canada).

Responsibilities will include research, didactic teaching and clinical supervision in both undergraduate and graduate programs. Experience in teaching and administration required. Salary and academic rank commensurate with qualifications and experience.

Both women and men are encouraged to apply. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Enquiries, current curriculum vitae and the names of three referees, should be submitted prior to April 30, 1987 to:

Dr. J.N. Wright,  
Professor and Head, Department of Stomatology,  
Faculty of Dentistry,  
University of Manitoba,  
780 Bannatyne Avenue,  
Winnipeg, Manitoba, R3E 0W3.



### UNIVERSITY OF MANITOBA FACULTY OF DENTISTRY PERIODONTIST

Applications are invited for a full-time tenure stream appointment in Periodontology. Applicants should have successfully completed graduate training in Periodontology and be eligible to sit the examinations of the Royal College of Dentists (Canada).

Responsibilities will include research, didactic teaching and clinical supervision in both undergraduate and graduate programs. Preference will be given to candidates with teaching experience. Salary and academic rank commensurate with qualifications and experience.

Both women and men are encouraged to apply. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Enquiries, current curriculum vitae and the names of three referees, should be submitted prior to April 30, 1987 to:

Dr. J.N. Wright,  
Professor and Head, Department of Stomatology,  
Faculty of Dentistry,  
University of Manitoba,  
780 Bannatyne Avenue,  
Winnipeg, Manitoba, R3E 0W3.

# SUBGINGIVAL IRRIGATION. THE PRACTICE MADE PERFECT.

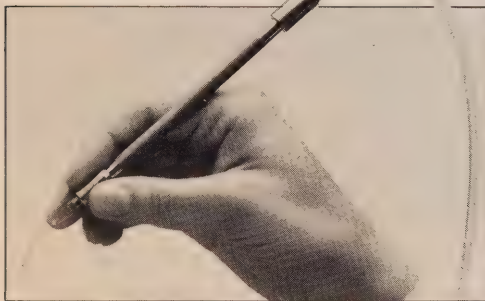
Subgingival irrigation, as an adjunct to scaling, root planing, and related periodontal therapy is increasingly being recognized as effective in



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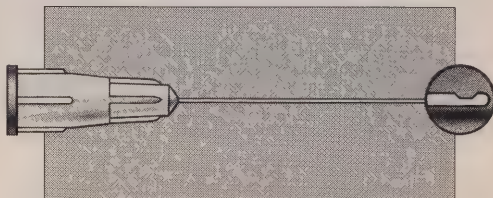
The Perio Pik is a precision instrument crafted from surgical stainless steel. The hand piece is finely balanced with a knurled grip for ease, comfort and accuracy of use. Designed with snap fit and luer-lock connectors, the Perio Pik attaches easily to the Water Pik® Appliance through a flexible, autoclavable hose. Included in the kit is a transparent dust cover which

**TELEDYNE WATER PIK CANADA**

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The Perio Pik is the state-of-the-art in subgingival irrigation. Easily incorporated into the practice of the periodontist or dental surgeon, the Perio Pik is ideal for the treatment and prevention of periodontal disease. The Perio Pik Subgingival Irrigation Kit can be ordered separately or complete with the Water Pik Appliance; a convenient foot pedal is also available. Either way, with the Perio Pik, the practice of subgingival irrigation has indeed been perfected.

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# Annual Report

Honour  
Roll

Tableau  
d'honneur

# Rapport annuel



Canadian Fund for  
Dental Education

Fonds canadien pour  
l'enseignement dentaire



# Chairman's Report

I am most pleased to present this report upon the completion of my second year as chairman of CFDE's Board of Trustees. It is also an honour to be chairman of this organization on the eve of its 25th Anniversary. As of October 22, 1987, the Canadian Fund for Dental Education will commemorate 25 years of supporting the advancement of dentistry in Canada.

In celebration of the past 25 years, the Trustees would like to see 1987 become a record-breaking year for the Fund. In order to accomplish this, changes will have to take place, both in the Fund's philosophy and its marketing strategy. The Board of Trustees is already considering possible changes and will be voting on them at the Annual Meeting in April.

## CFDE Moves to Ottawa

In keeping with the theme of change, CFDE moved its headquarters in October 1986 to Ottawa from Toronto. The fund is now housed in the Canadian Dental Association building at 1815 Alta Vista Drive in Ottawa. The move was brought about because CFDE was asked to vacate its offices in the Ontario Dental Association building to help accommodate ODA's growth. In examining all of the possibilities, the Trustees felt it would be a good time to both

strengthen ties with CDA and cut costs by moving to Ottawa. Unfortunately, the Fund's long-time employee, Miss Ingrid Kleysteuber, elected not to follow the Fund to Ottawa. Her dedication and service over the years are truly appreciated by the Trustees and all those who dealt with the Fund. CFDE is now managed by Ms. Janice Forsythe in the position of Executive Secretary.

## 1986 Grants Awarded

I am proud to report that, in a short 25 years, CFDE has been able, through the generous support of its donors, to contribute over \$2,300,000 to dentistry in Canada. All those who have contributed over the years should be satisfied with this achievement.

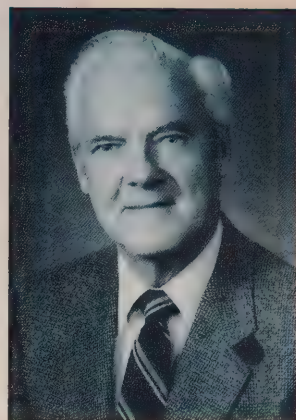
In 1986, the Fund's Trustees approved \$174,380 in grants and fellowships and \$174,568 was actually disbursed. As you can see, great efforts are made by the Trustees and staff to remain within budget. Unfortunately, as in past years, the demand was great and CFDE was unable to support many worthy applicants because of limited income. It is hoped that CFDE's 25th Anniversary will be a banner year and many more grants will be awarded.

A summary of 1986 grant support is listed, along with other financial highlights, on page 5 of this report. A brief description of some of the major projects CFDE supports follows.

CFDE has increased its support of dental awareness programs over the last year, an expansion which will likely continue in the years to come. Support was granted for the CDA's National Dental Health Month and ODA's Computerized Dental Health Check-up Program.

In addition to the above, support was awarded for a new public information program. The CDA Community Seniors' Dental Health Promotion Campaign, entitled "What a Difference a Little Care Makes" focuses on providing valuable dental health and information specifically relevant to seniors. The campaign provides educational material to public health units, local dental societies and seniors' groups. This project has already been tested in the Toronto area and has proven to be successful. CFDE funds will go towards expanding the project on a national basis. The Trustees of the Fund felt that the campaign was especially worthy of support because of its dual focus on public awareness and geriatric dentistry, two important concerns of dentists today.

The second CFDE-funded Summer Teaching Institute, conducted by the Association of Canadian Faculties of Dentistry, was held in June, 1986. The Institute's goal of improving the teaching skills of dental faculty members, and particularly new members, was an ambitious one, but, once again this year, the Institute was judged to be a huge success. Follow-up programs held at some of the Faculties of Dentistry across Canada also served to improve teaching skills. The 1987 Summer Teaching Institute promises to be even better with the inclusion of management training for departmental chairmen. The effects of the Institute are far-reaching and profoundly affect the future of dentistry in Canada. The Trustees have judged this to be such an important project that increased funding has been budgeted for the next year.



## Highlights of 1986 Income

Although CFDE did not surpass last year's landmark total for income from all sources, the Fund did experience a healthy year. Our total income was \$281,978, comprised of \$231,978 of operational income and a \$50,000 addition to the Dr. Lorne E. MacLachlan Endowment Fund. We were most pleased to receive this increase in the endowment fund, bringing its total to \$150,000. Interest earned annually on the endowment is distributed equally among four faculties of dentistry to be expended in furthering the teaching of prosthodontics.

In 1986, personal donations from dentists across the country totaled \$80,762, to, once again, make up the Fund's largest single source of income. Although down from last year's total, the leadership shown by the profession in donating to CFDE is indeed exemplary. There are still, however, many of our colleagues who do not assist their profession through CFDE and it is sincerely hoped that they will join our efforts during this 25th Anniversary year and beyond.

(continued on page 4)

# Le rapport du président

J'ai le plaisir de vous présenter ce rapport au terme de ma deuxième année à titre de président du conseil des fiduciaires du FCED. Je suis d'autant plus honoré d'être président de cet organisme la veille de son 25<sup>e</sup> anniversaire. Effectivement, le 22 octobre 1987, le Fonds canadien pour l'enseignement dentaire célébrera 25 années d'appui à l'avancement de la médecine dentaire au Canada.

Pour marquer ces 25 années d'existence, les fiduciaires aimeraient que 1987 soit une année record pour le Fonds. À cette fin, il faudra apporter des changements tant au niveau de la philosophie du Fonds qu'au niveau de sa stratégie de marketing. Le Conseil des fiduciaires étudie déjà des changements éventuels qu'il passera au vote à l'occasion de la réunion annuelle en avril.

## Le FCED déménage à Ottawa

En octobre 1986, le FCED a déménagé son siège social de Toronto à Ottawa. Le fonds loge maintenant dans l'édifice de l'Association dentaire canadienne au 1815, prom. Alta Vista à Ottawa. Ce déménagement est dû au fait que l'Association dentaire de l'Ontario, en raison de sa croissance, a dû reprendre l'espace qu'occupait le Fonds dans son édi-

fice. Après avoir envisagé toutes les possibilités, les fiduciaires ont décidé que c'était là une bonne occasion de renforcer les liens avec l'ADC et de réduire les coûts en déménageant à Ottawa. Malheureusement, Mlle Ingrid Kleysteuber, employée de longue date, a choisi de ne pas suivre le Fonds à Ottawa. J'aimerais souligner à quel point les fiduciaires et tous ceux qui ont eu à traiter avec le Fonds ont apprécié, au long des années, son dévouement et sa compétence. C'est Mad. Janice Forsythe, en sa qualité de secrétaire exécutif, qui administre maintenant le Fonds.

## Subventions accordées en 1986

C'est avec fierté que je puis souligner que, pendant sa courte existence de 25 ans, le FCED a pu contribuer plus de 2 300 000 \$ pour l'avancement de la médecine dentaire au Canada. Cette réalisation a de quoi rendre fiers tous ceux qui ont contribué au Fonds depuis sa fondation.

En 1986, les fiduciaires ont approuvé des subventions et des bourses d'une valeur totale de 174 380 \$; les déboursés correspondants ont été de 174 568 \$. Comme on peut le constater, les fiduciaires et le personnel du Fonds s'emploient à respecter le budget. Malheureusement, comme ce fut le cas auparavant, la demande était forte et le Fonds n'a pas été en mesure d'appuyer plusieurs candidats valables en raison de ses revenus limités. Nous espérons que le 25<sup>e</sup> anniversaire du Fonds sera une année exceptionnelle et qu'il pourra accorder beaucoup d'autres subventions.

Le lecteur trouvera à la page 5 du présent rapport un résumé des subventions accordées en 1986, ainsi que d'autres points saillants de l'exercice. Suit une description

concise de certains des projets important qu'appuie le FCED.

Le fonds a augmenté son appui aux programmes de sensibilisation en matière de santé dentaire tout au long de l'année dernière, une augmentation qui se maintiendra probablement dans les années à venir. Ainsi, on a appuyé le Mois national de la santé dentaire de l'ADC et le programme informatisé d'examen buccal de l'ADO.

Par ailleurs, le Fonds a appuyé un nouveau programme d'information du public. Il s'agit d'une campagne de promotion communautaire de la santé dentaire auprès des gens âgés, administrée par l'ADC et intitulée «Un peu de prévention peut faire toute la différence!», qui a pour but de fournir aux gens âgés des renseignements précieux sur leur santé dentaire. On diffuse de l'information auprès des unités d'hygiène publique, des sociétés dentaires locales et des groupes de gens âgés. Mis à l'essai dans la région de Toronto, le projet a été couronné de succès. Les fonds du FCED serviront à en élargir la mise en oeuvre à l'échelle nationale. Les fiduciaires ont trouvé que la campagne était particulièrement valable en raison de sa double portée, c'est-à-dire la sensibilisation du public et la médecine dentaire gériatrique, deux aspects importants pour les dentistes.

Le deuxième Institut pédagogique d'été financé par le FCED, sous la direction de l'Association des facultés dentaires du Canada, a été tenu en juin 1986. C'est un projet ambitieux qui a pour but d'améliorer les compétences pédagogiques des enseignants dans le domaine, et particulièrement celles des nouveaux membres; et, une fois de plus, l'Institut a connu un succès retentissant. Des programmes de suivi qui se sont déroulés à certaines facultés dentaires à travers le pays ont aussi permis d'améliorer les compétences pédagogiques des participants. L'Institut pédagogique

d'été de 1987 est encore plus prometteur car on compte y donner de la formation en gestion pour les présidents de département. Les retombées de ce programme ont une portée considérable, notamment sur l'avenir de la médecine dentaire au Canada. Les fiduciaires ont jugé ce projet tellement important qu'ils en ont augmenté le financement pour l'an prochain.

## Les points saillants des revenus en 1986

Bien que le FCED n'ai pas dépassé le total des revenus de toutes provenances de l'an dernier, il a connu une bonne année. Le total des revenus a été de 281 978 \$, c'est-à-dire 231 978 \$ de revenus de fonctionnement et un don supplémentaire de 50 000 \$ au Fonds de dotation Dr. Lorne E. MacLachlan. Nous avons grandement apprécié cet apport au Fonds de dotation dont la valeur totale est maintenant de 150 000 \$. Le rendement annuel de ce fonds est réparti également entre quatre facultés de médecine dentaire qui consacrent ces sommes à faire progresser l'enseignement de la dentisterie prothétique.

En 1986, les dons individuels des dentistes de partout au pays se sont élevés à 80 762 \$, ce qui en a fait, une fois de plus, la plus importante tranche de revenus du Fonds. Bien que cette somme soit inférieure au total de l'an dernier, le leadership dont fait preuve la profession en appuyant financièrement le FCED est tout à fait exemplaire. Néanmoins, un grand nombre de nos collègues n'aident pas leur profession par l'entremise du FCED et nous espérons sincèrement qu'ils se joindront à nos efforts cette année, à l'occasion de notre 25<sup>e</sup> anniversaire, et au-delà.

Les dons des organismes dentaires ont augmenté à 26 901 \$ en

(suite à la page 4)



(continued from page 2)

Donations from dental organizations increased in 1986 to \$26,901. This ongoing support and commitment to the goals of the Fund are truly appreciated.

Our friends in business and industry continued to support the Fund in 1986, with donations totaling \$43,686. I regret to note that this is a substantial decrease over last year's total, but the change is due mainly to an error which occurred as a result of the staff changeover at CFDE headquarters. It is hoped that those corporations which did not send in their regular donation in 1986 will contribute twice in 1987.

Contributions from dental hygienists increased by over 50% in 1986. This support is indeed appreciated as it indicates the hygienists' growing commitment to CFDE's efforts, especially concerning projects relating specifically to dental hygiene.

I would also like to acknowledge the number of In Memoriam and Tribute gifts forwarded to the Fund in 1986. This is a thoughtful way to remember friends and colleagues and it is hoped that supporters of CFDE will continue to use these tributes as occasions arise throughout the year. For both the In Memoriam Fund and Tribute Gifts, an attractive card is forwarded in the donor's name to acknowledge each gift.

## What Lies Ahead

CFDE, with its two million dollar investment in dentistry, has obviously played an important role in the advancement of the profession. With everyone's help it will continue to do so, on an even larger scale, in the years ahead.

In order to increase the monies available through the Fund, the Trustees have planned an expanded marketing strategy for 1987. One component of this strategy will be the CFDE Lottery. This lottery, with a prize of a trip for two to the 1987 Annual Meeting of the FDI in

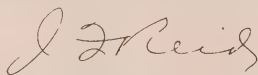
Buenos Aires, is being marketed primarily in Ontario, because of lottery licence restrictions. Tickets are also being made available, for \$25 each (to celebrate our 25th Anniversary) through our Trustees and Secretariat. The draw will take place on May 12, 1987, at the Ontario Dental Association Annual Convention. We hope to raise over \$40,000 from the lottery and if it is successful, it will become an annual fundraising event.

In recognition of the profession's changing needs, the Fund has already advanced in new directions in its philosophy of granting funds. However, to ensure its granting priorities continue to conform to the latest community and professional requirements, the Trustees will again, in 1987, carefully examine and evaluate the programs sponsored by CFDE. High on their list of priorities will unquestionably be the support of programs that will contribute to the public's awareness of the importance of good dental health and will thus be of direct benefit to the dental profession and industry alike.

## Appreciation

Although the Fund did not reach its goals in 1986, it still made a significant contribution to dentistry. CFDE's accomplishments were made possible through the support of all those who gave so generously. On behalf of my fellow Trustees and all those who benefited from the Fund's support, may I express my most sincere appreciation. I look forward to your continued and generous assistance in 1987, the year of the Fund's 25th Anniversary.

Respectfully submitted,



J. Fred Reid, D.D.S.  
Chairman, CFDE Board of Trustees

(suite de la page 3)

1986. Nous leurs sommes très reconnaissants de leur appui et engagement soutenus à l'endroit des objectifs du Fonds.

Pour leur part, nos amis du monde des affaires et de l'industrie ont continué à aider le Fonds en 1986, avec des dons totalisant 43 686 \$. Je regrette d'avoir à mentionner qu'il s'agit là d'une réduction importante par rapport au total de l'an dernier; par contre, il faut dire que cette baisse est principalement imputable à une erreur qui s'est produite à la suite d'un changement de personnel au siège social du FCED. Nous osons souhaiter que les sociétés qui n'ont pas envoyé leur don habituel en 1986 contribueront à deux reprises en 1987.

Les contributions des hygiénistes dentaires ont augmenté de 50 % en 1986. Cet appui fort apprécié témoigne de l'engagement accru des hygiénistes à l'endroit des efforts du FCED, particulièrement en ce qui concerne les projets spécifiquement associés à l'hygiène dentaire.

Il convient également de faire état des dons commémoratifs et autres faits au Fonds en 1986. Nous formulons le souhait que ceux qui appuient le Fonds continueront à honorer le souvenir d'un ami ou d'un collègue de cette façon tout au long de l'année. Tant pour les dons commémoratifs que pour les dons faits en hommage, le donateur reçoit une carte attrayante le remerciant personnellement de son geste.

## Perspectives d'avenir

Le FCED, avec son investissement de deux millions de dollars dans la médecine dentaire, a assurément compté pour beaucoup dans l'avancement de la profession. Avec l'aide de tous, il continuera dans cette foulée, et même à plus grande échelle dans les années à venir.

Pour augmenter les montants qu'ils comptent accorder, les fidu-

ciaires ont prévu une stratégie de marketing élargie pour 1987. La loterie du FCED en est une composante. Cette loterie, dont le prix sera un voyage pour deux au Congrès annuel de 1987 de la FDI à Buenos Aires, est principalement commercialisée en Ontario en raison des contraintes applicables aux permis d'exploitation des loteries. On peut aussi se procurer des billets, pour 25 \$ chacun (pour marquer notre 25<sup>e</sup> anniversaire) par le truchement de nos fiduciaires et de notre secrétariat. Le tirage aura lieu le 12 mai 1987 à l'occasion du Congrès annuel de l'Association dentaire de l'Ontario. Nous espérons ainsi recueillir 40 000 \$; le cas échéant, la loterie deviendra une activité annuelle de levée de fonds.

S'adaptant à l'évolution des besoins au niveau de la profession, le Fonds a déjà adopté de nouvelles orientations en matière de subventions. Cependant, pour continuer à répondre aux plus récents besoins communautaires et professionnels, les fiduciaires étudieront et évalueront minutieusement, à nouveau en 1987, les programmes financés par le Fonds. Bien entendu, ils accorderont la priorité à ceux qui enseignent au public l'importance de la santé dentaire, et qui profiteront ainsi directement à la profession et à l'industrie dentaires.

## Remerciements

Bien que le Fonds n'ait pas atteint ses objectifs en 1986, il n'en a pas moins fait une contribution importante à la médecine dentaire. Les réalisations du FCED n'ont été rendues possible que grâce à tous ceux qui l'ont appuyé si généreusement. Au nom des fiduciaires et de tous ceux qui ont profité de l'appui du Fonds, je désire exprimer ma sincère reconnaissance. Qu'il me soit permis de compter sur votre aide soutenue et généreuse en 1987, année du 25<sup>e</sup> anniversaire du Fonds.

Président, Conseil des fiduciaires,



J. Fred Reid, D.D.S.

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## Financial Highlights

## Faits financiers marquants

### Income by Source

### Revenus et provenance

|                                                                                                               |                  |               |
|---------------------------------------------------------------------------------------------------------------|------------------|---------------|
| Dental Profession<br>Profession dentaire                                                                      | \$ 80,762        | 28.6%         |
| Investment and sundry income<br>Revenus de placements et de sources diverses                                  | 70,414           | 25.1%         |
| Addition to the Dr. Lorne E. MacLachlan Endowment Fund<br>Apport au fonds de dotation Dr. Lorne E. MacLachlan | 50,000           | 17.7%         |
| Business and industry<br>Monde des affaires et industrie                                                      | 43,686           | 25.5%         |
| Dental organizations<br>Organismes dentaires                                                                  | 26,901           | 9.5%          |
| In Memoriam<br>Dons commémoratifs                                                                             | 7,015            | 2.5%          |
| Tributes and other contributors<br>Hommages et autres contributions                                           | 1,855            | 0.6%          |
| Dental Hygienists<br>Hygiénistes dentaires                                                                    | 1,345            | 0.5%          |
| <b>TOTAL</b>                                                                                                  | <b>\$281,978</b> | <b>100.0%</b> |

### Dentistry has been enhanced by these grants

### La médecine dentaire a progressé grâce à ces subventions

|                                                                                                                                                                            |                  |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|
| Teacher training fellowships (Dentists and Dental Hygienists)<br>Bourses de formation en enseignement (Dentistes et hygiénistes dentaires)                                 | 38,500           | 22.1%         |
| Grants to dental schools<br>Subventions à des écoles dentaires                                                                                                             | 27,180           | 15.5%         |
| Dental health month and other public awareness programs<br>Mois de la santé dentaire et autres programmes d'information du public                                          | 20,600           | 11.9%         |
| Summer program to improve teaching skills of dental faculty members<br>Programme d'été de perfectionnement des compétences pédagogiques des membres des facultés dentaires | 20,000           | 11.5%         |
| Student table clinics and conference<br>Conférence et exposés d'étudiants                                                                                                  | 17,202           | 9.8%          |
| Dental hygiene workshop and educational projects<br>Atelier d'hygiène dentaire et projets de formation                                                                     | 14,309           | 8.1%          |
| Biennial Conference on Dental Research and Education<br>Conférence biennale sur la recherche et la formation dentaires                                                     | 12,500           | 7.2%          |
| Dr. Lorne E. MacLachlan Endowment/Teacher training awards<br>Bourses de formation d'enseignants/Fonds de dotation Dr. Lorne E. MacLachlan                                  | 10,876           | 6.2%          |
| Dental Teaching Conference on Periodontics<br>Conférence sur l'enseignement de la médecine dentaire appliquée à la périodontite                                            | 7,500            | 4.3%          |
| Sundry awards/Prix divers                                                                                                                                                  | 5,901            | 3.4%          |
| <b>TOTAL</b>                                                                                                                                                               | <b>\$174,568</b> | <b>100.0%</b> |

Our records have been audited by Thorne Ernst & Whinney. A copy of their report is available on request.

La vérification de notre comptabilité a été effectuée par Thorne Ernst & Whinney. On pourra se procurer un exemplaire de leur rapport en faisant une demande à cet effet.

|                                                                 |           |
|-----------------------------------------------------------------|-----------|
| Uses of support and revenue/Soutien et revenus                  | \$281,978 |
| Program commitments/Programmes                                  | 80%       |
| Fundraising and Administration/Levée de fonds et administration | 20%       |



1 9 8 6

# Honour Roll Tableau d'honneur

Business, Entreprises,  
Industry industrie  
and Dental et organismes  
Organizations dentaires

• Contributor for 15 years or more/Donateur depuis 15 ans ou plus

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Although individual names are not listed, the Fund's Trustees also wish to express their gratitude for the many smaller gifts received from various organizations.

Bien que les noms individuels ne soient pas cités, les fiduciaires du Fonds désirent exprimer leur appréciation reconnaissante pour les nombreux dons plus modestes provenant de divers organismes.

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Over the years foundations have been set up in memory of the following people:

Dr. Lorne E. MacLachlan

Mr. Murray M. MacDonald

Dr. George W. Barrett

The support of these foundations, essential to the success of many of CFDE's on-going projects, is gratefully acknowledged.

Des fonds de dotation ont déjà été établis pour commémorer la mémoire des suivants :

Docteur Lorne E. MacLachlan

Monsieur Murray M. MacDonald

Docteur George W. Barrett

Les fiduciaires du FCED reconnaissent gracieusement le soutien de ces fonds de dotation qui sont essentiels au succès de plusieurs de nos projets.

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# Book Review Supplement

*In this issue, the Journal presents its second Book Review Supplement. Designed to continue to bring our readers up to date on what is currently being published for dental practitioners and auxiliaries, this special section of the Journal is sponsored by C.V. Mosby Ltd.*

## DENTAL MANAGEMENT OF THE MEDICALLY COMPROMISED PATIENT

James W. Little, and  
Donald A. Fallace

2nd Edition,  
The C.V. Mosby Co.

The good news is that this book, appearing only a few years after the first edition, is not just a warmed-over rehash of the original.

Major changes in the new edition of this handbook, originally published in 1980, include new chapters on the management of patients with oral cancer, cardiovascular prostheses, and degenerative joint diseases. In this version, the authors have chosen to combine the original two chapters on renal disease and parathyroid dysfunction and mineral homeostasis into one, based on the progression of kidney failure to renal osteodystrophy.

This may be quite logical, but other liberties in revising the original text are, in the opinion of this reviewer, ill-founded. Thus, an excellent previous chapter on the differential diagnosis of head and facial pain has shifted its focus narrowly to two admittedly important neurological disorders — stroke and seizures, but at the cost of eliminating essential information for dental practitioners. Also omitted in this text is the chapter on nutritional disorders, which was well written and certainly plays an important etiological role in the diagnosis of medical diseases with oral components.

Major refinements have been made in the chapters on viral hepatitis, which now includes alcoholic cirrhosis of the liver; a new section on infective endocarditis; and updating on the disorders of diabetes,

allergy, hypertension, ischemic heart disease, and sexually transmitted diseases. While not as exhaustive as other extant textbooks in oral medicine, this attempt to educate and elevate the knowledge of the practitioner makes the volume a basic reference tool for the office shelf.

The format of this edition, as with the first, makes it an easy-to-use handbook when and if the patient should present with specific or multiple medical diagnoses. A prefatory list of protocols, summarizing the medical problems, the medical-dental interactions, and emergency dental care, is a useful, albeit simplistic referral tool. Each chapter then gives a more detailed description of the medical disorders, including incidence, etiology, symptomatology, oral manifestations, medical management, and dental management. For two authors to have produced such a comprehensive book is truly a prodigious task, and one must salute the erudition of their text.

We would be remiss, however, if we did not point out some of the weaknesses in this worthwhile volume, to wit:

- Item:* There is no discussion of Acquired Immune Deficiency Syndrome (AIDS), obviously because this phenomenon has emerged since the second edition was undertaken.
- Item:* The recommendations of the American Heart Association for antibiotic prophylaxis before and after invasive dental treatment have substantially changed from those of the original 1977 protocol.
- Item:* Missing is a discussion of metabolic bone diseases such as Paget's and osteoporosis which have important ramifications for dental practitioners.
- Item:* The chapter on behavioral considerations omits any discussion of Alzheimer's disease, which has been called the fourth biggest killer of the elderly.
- Item:* The authors question the utilization of antibiotic prophylaxis before and after dental intervention in patients with arthroplasty and total joint replacement.
- Item:* The quality of the photographs illustrating the chapter on oral cancer would have benefitted from color.

To be sure, no book on this important subject can be all things to all dentists, but at a time when medico-legal considerations mandate defensive practice, this text is an essential tool in the dental armamentarium. More important, however, it is a guide to good dental practice and can help make special patient care a rewarding aspect of professional activities. It is not a substitute for a more comprehensive textbook in oral medicine such as Burket's Oral Medicine, but it does make a handy reference and is recommended for the practicing dentist and hospital resident.

*This book was reviewed by  
Saul Kamen, DDS  
Chief of Dental Service  
State University of New York  
at Stony Brook, New York*

## ESTHETIC COMPOSITE BONDING

Ronald E. Jordan

C.V. Mosby Co.  
Scarborough, Ont.  
\$92.50  
352 pages

When one of North America's premier teachers of restorative dentistry writes a book, the dental world expects an excellent product. None will be disappointed by this text.

*Esthetic Composite Bonding* by Ron Jordan clearly reflects the author's broad knowledge of his subject. His discussions of resin-enamel, resin-dentin and resin-resin bonding are very thorough and form a solid base for the balance of the book. Sharing authorship with Gwinnett, Suzuki, and Boksmann, chapters on the treatment of discoloured dentition, posterior composite restorations and fissure sealants are clear and relevant.

Further major contributions are made by Mopper, Feigenbaum, Friedman, Comforges and Gratton. Topics include colouring resins, opaquers and tints, direct veneers and fixed "bonded" prosthodontics.

This last topic, by Gratton, is especially complete and broad ranging. He deals with the subject of "bonded" bridges with a variety of retentive types, drawing on



extensive research and clinical trials to reinforce his arguments.

Somewhat of a surprise is the chapter written by a junior Jordan, David, an ophthalmologist, on the effects of visible and near-visible light on the human eye. For anyone concerned with potential eye damage, this chapter will answer many previously unanswered questions.

This team of quality authors has produced a very strong text that reviews and defines bonding in dentistry from theoretical basics to the present day state of the art. Jordan, as always, is excellent both as an author and as an editor of his colleagues' contributions.

If there is a weakness, it lies in some inconsistent photography that makes it difficult to fully appreciate the effects of the restorations being shown. Also, the over use of brand names rather than generic categories of materials may detract from the academic nature of the text.

As the demand for esthetic dentistry by our patients intensifies, all dentists must prepare for a future that will depend on "bonded" restorations more each year. As this book is sure to become the benchmark text in "bonding dentistry" at dental schools worldwide, so should it be required reading in continuing education for all practitioners of restorative dentistry.

*This book was reviewed by  
Dr. John H. Pate  
Guelph, Ontario*

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## CURRENT ADVANCES IN ORAL AND MAXILLOFACIAL SURGERY: ORTHOGNATHIC SURGERY VOL. V

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D.W. Shelton and  
W.B. Irby

*C.V. Mosby Co.  
St. Louis, Missouri  
357 pages*

Unlike Volume IV, Volume V concentrates on one specific facet of Oral and Maxillofacial Surgery, namely orthognathic surgery. The 357 page text covers many of the pertinent aspects of orthognathic surgery in its nine chapters. The thirteen contributors are obviously well experienced in their subject matter and draw upon a considerable number of case histories in writing their respective chapters.

The opening chapter is by an orthodontist, the second chapter was written by an anesthetist and the remaining chapters are presented by oral and maxillofacial surgeons.

In Chapter one the orthodontic author indicates his preference for the Harvold

analysis in treatment planning. He outlines his successes with orthopedic corrector type of appliances (e.g. Bionator) and the monobloc activator.

Chapter two is written by an anesthetist who is obviously experienced in the challenges of providing anesthesia for orthognathic surgery cases and he makes special mention of emergencies and deliberate hypotension.

In Chapter three the author reviews the total maxillary alveolar osteotomy in orthognathic surgery. He draws upon a background of experience with over 150 cases extending over an eight year period. Facial and palatal approaches are described in relation to the TMAO. Step-by-step technique illustrations and case presentations assist the reader in grasping the elements of this procedure.

Chapter four deals with the subject of genioplasty and addresses chin problems with and without associated occlusal disharmonies. Preference is shown to the soft tissue analysis of Legan and Burstone.

Chapter five relates to the practical use of functional principles. As the author states, "the purpose of this chapter is to describe several techniques utilized in the management of orthognathic problems and, in so doing, to explain the rationale behind these techniques".

Chapter six is entitled "Pre-prosthetic oral and maxillofacial surgery: a rational approach for systematic evaluation and treatment planning". A method of facial analysis in treatment planning is offered. Included is an assortment of case histories with various pre-prosthetic problems and their surgical solutions.

Chapter seven deals with the reconstruction of the maxillary alveolar cleft palate patient. The history of cleft surgery is briefly reviewed and a statistical review of cleft incidence is included. The author discusses cleft palate orthopedics and bone grafting of clefts. Typical cases are presented and complications are reviewed.

Chapter eight relates exclusively to the "Analysis and Treatment of Hemifacial Microsomia". Reference is made to the disparity in treatment emphasis (i.e. jaw vs. ear) depending on the treating surgeon. The authors have developed an approach to analysis in treatment of this deformity based on 80 patients.

Chapter nine describes applications of high mid-face procedures in the management of dento-facial deformities. It deals with diagnostic stratagems and applications of subcranial high mid-face procedures for dento-facial deformity.

This reviewer found the text to be both current and relevant in its updating of the subject material. The photographs and illus-

trations, which were ample in number, were found to be clear, of good contrast and well reproduced. This text would be a helpful addition to the library of those surgeons involved in the more sophisticated and challenging aspects of orthognathic surgery.

*This book was reviewed by  
A.E. Swanson  
Associate Professor  
University of British Columbia*

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## SYNOPSIS OF ORAL PATHOLOGY SEVENTH EDITION

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S.N. Bhaskar

*C.V. Mosby Co.  
St. Louis, Missouri, 1986  
809 pages  
788 illustrations*

Five years have elapsed since the printing of the sixth edition of this book and the author has updated the text to include newer concepts evolving in the subject. There has been a notable increase in the number of illustrations, significantly augmenting the text material. The book has been expanded by the addition of approximately seventy pages. Notably, the chapters on immunology in Part II and periodontal diseases in Part III have been expanded and updated.

The classifications and discussions of odontogenic cysts and tumors have been modified and expanded; however, there still remains some apparent confusion in these areas. For example, the descriptions of the primordial cyst, odontogenic keratocyst and multilocular cyst seem to conflict considerably and could lead to confusion in the mind of the reader.

The move to update the text is also evident in subsequent chapters. The presentation of surface lesions in Chapter 13 is notably enhanced by the inclusion of sections on AIDS, traumatic eosinophilic granuloma and pyostomatitis vegetans. Similarly, the chapters on malignant tumors of soft tissues and salivary lesions have been modified to include the more recent changes in classification.

As the title implies, this book is a synopsis or overview of the subject of Oral Pathology and should not be mistaken for a detailed textbook on the subject. In the attempt to summarize detail is sometimes lost and generalizations are formed. In most areas, this new edition still offers a valuable and current overview of the subject matter.

*This book was reviewed by  
David Mock  
Ass. Prof.  
Dept. of Oral Pathology  
University of Toronto*

## STO — SURGICAL TREATMENT OBJECTIVE: A SYSTEMATIC APPROACH TO THE PREDICTION TRACING

Larry M. Wolford,  
Frank W. Hilliard, and  
Daniel J. Dugan

*C.V. Mosby Co.  
St. Louis, Mo.  
pub. 1985  
113 pp and numerous teaching aids.*

What costs over \$300.00, and does not replace the basic orthognathic planning techniques that all oral surgery residents are forced to learn until they become second nature and can be done in their sleep? What is being marketed as a patient education tool when it shouldn't even be needed if the surgeon has done his (or her) workup properly? What currently available prediction tracing package has failed to impress, even in the slightest, one full time Canadian Oral Surgeon who pretends to be a part-time book reviewer?

No matter how many times I've tried to use this package, I keep rediscovering how limited its use really is. To be sure, the manual has a wonderful bibliography of classic cephalometric-related references, and includes a few quick reference tables for things we never remember and always have to look up (like bone/soft tissue movement ratios in various chin procedures), but to my mind, there is exceedingly little in this package to warrant serious consideration to purchase by most clinical oral surgeons. A fast prediction planner/patient education aid would doubtlessly benefit some oral surgeons, but it is more likely to be the product of some computer software genius.

*This book was reviewed by  
Dr. J.H. Gryfe,  
an oral surgeon in  
Weston, Ontario*

## NEW VISTAS IN ORTHODONTICS

Editor: Lysle Johnston, Jr.

*Philadelphia: Lea and Febiger, 1985  
\$51.15*

To find an orthodontic textbook that is contemporary and typically cross-sectional is not an easy task. Rather than deal with a single topic or theme, Johnston invited 11 eminent orthodontic clinician-scientists to submit a synopsis of the current state-of-the-art as it applies to their subject area. The result is a series of 20 to 60 page articles that are presented in a highly readable, adequately illustrated, concise format.

Alton Moore, to whom the original Vistas of Orthodontics was dedicated some 23 years ago, presents an excellent overview of orthodontics from both the historical and contemporary perspectives as well as the "North American/European" orthodontic philosophies.

The topics contained in the current edition range from craniofacial biology through occlusion and functional appliances to biomechanics; concluding with chapters on Surgical Orthodontics and Cleft Palate treatment.

This book is not a "how-to-do" text but rather relates clinical concepts to underlying biologically based principles. As such it would behoove all dentists who are utilizing orthodontics in their practice to become re-acquainted with basic biological tenants of diagnosis and treatment planning rather than base their treatment philosophy on anecdotal case reports.

One topic that is missing from this text is long term treatment results compared to non-treated cases. Success of a case is not judged immediately following treatment but rather 5 to 10 years plus following the discontinuance of appliances and retainers.

This book would be an excellent reference text and a valuable addition to both orthodontic and general practitioner libraries.

*This book was reviewed by  
Dr. Kenneth Glover, Chairman  
Division of Orthodontics  
University of Alberta*

## ATLAS FOR MAXILLOFACIAL PANTOMOGRAPHIC INTERPRETATION

Alex G. Chomenko

*Quintessence Publishing Co. Inc., 1985,  
Chicago, Illinois*

Designed mainly to identify and avoid the most common errors in maxillofacial pantomographic interpretation, this atlas, written by Dr. Chomenko, fulfills its role.

The atlas is divided into seven parts which are subdivided into 23 chapters. In part one, the author discusses the principles of pantomography: plane-in focus, area of sharpness, blurring and distortion. The explanations are clear and the quality of the images is excellent.

The second part of the book is devoted to standard pantomograph. The radiographic structures are identified (shadows, anatomic structures, etc. . .); there is also a good review of picture variations due to mechanical and positional factors as well as the normal anatomic variations of jaws.

The third part deals with modified pantomographic techniques which improve the

visualization of the temporomandibular joint and the identification of the midfacial structures. The fourth part of the atlas makes a correlation between pantomograph and conventional film. Dr. Chomenko discusses the value of pantomography in jaw pathology, interprets the physical bone changes of jaw lesions, distinguishes slow growing from rapidly growing-lesions, speaks about the disorders of dental arches and ramus, discusses the temporomandibular joint abnormalities and maxillary sinus diseases and makes a short review of traumatic injuries to the jaw and of bone healing process.

In part five, the author shows the reader how to localize different structures in the jaw bone and in the soft tissues.

Part six is devoted to the correction of pantomography errors: positioning of the patient, machine factors, developing factors and film artifacts from normal and improper procedures.

Part seven challenges the reader with radiology cases for self-testing.

Those who expect to find a complete review of the lesion of the jaw bones in this atlas might be disappointed. It is a very good handbook which permits the reader to deal with the most common problems encountered in pantomographic interpretation. The quality of the radiographs is outstanding and the credit should be given to the author for their selection and to the publisher for their reproduction. This atlas is an excellent source of information for the clinician who seeks a better understanding of pantomographic radiography.

*This book was reviewed by  
Dr. Pierre Duquette,  
Oral Medicine,  
Université de Montréal*

## ATLAS OF DISEASES OF THE ORAL MUCOSA

J.J. Pindborg

*4th ed. Saunders, 1985  
355 pages  
\$125.00*

Atlases of oral pathology seem to be particularly popular with younger dentists who are still hoping to discover that a modified 'flash-card' approach to learning oral pathology is superior to understanding the fundamentals of tissue response to injury. A good atlas may yet prove that this hope is not in vain.

Dr. Pindborg's Atlas has become well known in the dental profession for the good organization of the material, the superb quality of the clinical photographs and the wealth of information compressed into the brief description of each of the illustrated



diseases. The fourth edition of the Atlas maintains this standard. The number of illustrations of some diseases is increased, some new diseases (e.g. AIDS, Ciclosporin hyperplasia) have been added and the references updated and expanded. The author's familiarity with oral disease in the developing countries as well as in the western world is apparent in the wide range of diseases illustrated and described.

Even an exceptionally high quality Atlas however, has its limitations. Few diseases can be adequately represented by one or several clinical illustrations, recognizing that diseases of the oral mucosa tend to show more similarities than differences. Furthermore, diagnosis is frequently required when a disease is in the early stage of development and/or present in atypical form. In such cases reference to an atlas which shows examples which typify the disease is of little value. These limitations compromise the effectiveness of atlases of diseases of the oral mucosa both in the classroom and in the clinical setting. The addition of selected photomicrographs, especially where clinical features are not diagnostic, would enhance the value of this and other similar atlases.

Nevertheless Dr. Pindborg's Atlas continues to be a valuable diagnostic tool for those seriously interested in diseases of the oral mucosa. His dedication to quality, precision and currentness of information will ensure a prominent place for the 4th Edition on the library shelves of dentists.

*This book was reviewed by  
H.M. Dick, DDS, MSc, FRCDC  
Faculty of Dentistry,  
University of Alberta,  
Edmonton.*

## ONLINE RESEARCH AND RETRIEVAL WITH MICROCOMPUTERS

Nahum Goldmann

*TAB Professional and Reference Books,  
Blue Ridge Summit, Pennsylvania;  
Distributed in Canada by  
John Wiley & Sons Canada Limited,  
Toronto. 1985. \$25(US).  
193 pages*

Two kinds of expertise are involved when an on-line search is conducted: expertise in searching databases and expertise in the field or discipline which is the subject of the search. The "end-user" is the disciplinary expert who may or may not know how to search a database. Many librarians are expert in the techniques of searching databases provided the end-user is clear and articulate about the goal of the search. The success of any search, to some extent, relies

upon the contribution of the end-user. The primary virtue of this book is its orientation to the end-user and the assistance it provides the end-user in developing search strategies.

The book contains 14 chapters, all well supported with tables and illustrations drawn from actual on-line searches. The first six chapters are introductory and present information on the growing importance and usefulness of on-line searching. An overview of on-line systems and types of database content is provided, along with background on computers, terminals and telecommunications systems. A full chapter is devoted to the IBM PC and its use in information gathering.

Chapters seven through nine take the reader into the online retrieval process, while providing necessary background on how databases are structured and how combinational logic is employed in searching techniques. Chapter ten, "The End-User, The Intermediary and Information Evaluation" examines arguments for and against searching by end-users and elaborates Goldmann's theme — the end-user who can search effectively is in the best position to get results:

"Commonly used searching techniques are aimed primarily at increased search precision even if it means a decrease in search recall. One of the primary reasons for such a situation is the fact that these techniques were primarily developed for the special intermediary and are generally unsuitable for use by the subject expert himself. . . . By using only controlled terms, a subject expert limits his ability to process information to ability of the producer's indexers (which may be very low). This may formally increase the recall ratio to a significant degree, but also tends to narrow the subject expert's professional horizon by filtering out any potential for associative problem-solving based on the retrieved information."

Chapters 11 and 12 elaborate the Goldmann approach to building a search strategy and carrying it out on-line. Goldmann describes subject, name and citation searches, but his own search technique "is based on the assumption that a subject search is the most important kind of information activity for a subject expert in pursuing his professional objectives." In any case, chapter 13 presents additional information on name and citation searches. Chapter 14 presents the principal elements of the Goldmann Subject Expert Searching Technique in a step by step fashion.

Goldmann's book and Goldmann's search technique should be very useful to professionals who need to search databases and who have felt restricted or constrained

because their on-line searching has been conducted by intermediaries. Goldmann's message is that there is indeed more potential in on-line searching than subject experts have been able to realize from searches conducted by intermediaries; he not only advises professionals to "do it yourself", he shows in detail — and with many excellent illustrations — just how it can be done.

*This book was reviewed by  
Brian J. Henderson,  
CDA's Director of Accreditation*

## "PERIODONTAL DISEASE: RECOGNITION, INTERCEPTION AND PREVENTION"

S. Cripps

*Quintessence Publishing Co.  
Chicago, Ill.  
290 pages, illustrated*

This book has been excellently written for every conscientious general practitioner who wants to provide a better health service and also as a helpful guide for all general practitioners in their search for knowledge in the treatment of periodontal problems. Although this book was written in England, where the author has practiced for about thirty five years, he is well known as a Canadian and a graduate of McGill University where he was excited and stimulated by the late Dean Prescott Mowry and the retired former chairman of Periodontics, Dr. Phillip Gitnick.

The author does not claim that his book covers all aspects of periodontal therapy such as various flaps, mucogingival surgery, etc., but covers therapy that the general practitioner should be providing.

This book is undoubtedly one of, if not the most prolific colour illustrated books of its kind. There are as many as fifty excellent coloured pictures per chapter which adds greatly to the general practitioner's understanding of the material. The references and the Index are most helpful.

Fortunately, the author stresses the importance of early examination, interception and various conservative modalities of treatment. Periodontal probing for pockets is stressed as it is a well known fact that early diagnosis and treatment is of the essence. Dentists have in the past been able to keep very busy by doing restorative dentistry to the exclusion of the diagnosis and treatment of other oral diseases and conditions.

Now, with the so-called surplus of dentists in parts of Canada, some practitioners realize there is a great mass of patients whose dentists have ignored the onset and

progression of periodontal disease. If every adult patient was routinely examined with a periodontal probe, we would need three times as many dentists.

One of the greatest advantages of this book is the one hundred pages of illustrated photographs of the step by step treatment of occlusal problems. Occlusal diagnosis and therapy has always been difficult for the practitioner. The author is to be complimented for his expertise in making a difficult subject so understandable. For this reason alone, this book should be in every general practitioner's library for daily perusal.

*This book was reviewed by  
Dr. Donald S. Moore  
Professor Emeritus  
Dept. Oral Medicine  
University of Western Ontario  
London, Ontario*

## INTRODUCTION TO RADIOGRAPHIC CEPHALOMETRY

Alex Jacobson and  
Page W. Caufield

*Lea and Febiger,  
Philadelphia, Pa. 1985*

The authors state in the preface that "the purpose of the present book is to introduce cephalometrics to individuals with little or no experience in the field . . . who wish to familiarize themselves with the subject, not only for academic reasons, but for the purposes of clinical application."

The book begins with a chapter by A. Jacobson on the historical background of cephalometric radiography and its importance in the differential diagnosis of various malocclusions. L.R. Manson-Hing has a chapter on radiologic considerations in obtaining a cephalogram and in the next chapter, P.W. Caufield discusses a tracing technique and identification of landmarks. Jacobson continues with chapters on Downs', Steiner, the "WITS" appraisal and Ricketts analyses. Coenraad Moorrees contributes a chapter on natural head position and L.M.L. Lebet discusses the mesh diagram and its use in clinical orthodontics in the following chapter.

The book achieves an excellent ending with the chapters 10, 11, and 12. In chapter 10, Lysle Johnston examines the evolution of cephalometrics and provides some general guidelines as to how the cephalometric templates can be used, while Jacobson in the last two chapters describes the use of the proportionate template and the analysis of the soft tissue facial profile.

The subject material is very good, the drawings are excellent and the photographs

are of a similar calibre with the exception of those in chapter three. The poor quality of these photographs might cause some difficulty to the uninitiated student of cephalometrics in identifying the various anatomic landmarks. Other than this minor consideration, the book is really quite worthwhile and belongs in every dental library.

*This book was reviewed by  
Dr. A.H. Mamandras, Director,  
Undergraduate Orthodontic Programme  
University of Western Ontario  
London, Ont.*

## MYOFASCIAL PAIN AND DYSFUNCTION: THE TRIGGER POINT MANUAL

J.G. Travell and D.G. Simons

*Williams and Wilkins, 1983  
Baltimore, Md.  
713 pages*

This is the first of two volumes by Drs. Travell and Simons on the subject of myofascial trigger points. This first volume focuses on the muscles of the upper half of the body while the proposed second volume deals with the lower half of the body. The authors' goal is to provide the necessary information to enable the practitioner to diagnose and treat myofascial pain syndromes. The senior author, Dr. Travell, is a physician who has earned an excellent reputation in the area of myofascial pain.

The pathophysiology and clinical characteristics of trigger points, their interpretation and inactivation, and the nature of muscle pain is discussed in the first four chapters. While these areas are covered in detail, additional illustrations would have been helpful. I found the glossary in Chapter 1 and the discussion surrounding the interpretation of terms used in myofascial pain and dysfunction useful. Part I discusses the muscles of the head and neck region that refer pain to the upper part of the body. This section of the text is well-illustrated. The anatomy and innervation of each muscle is described in detail. The authors explain the clinical technique for palpating trigger points in each muscle and they discuss the factors that initiate or perpetuate problems in the muscles. They clearly describe the technique for stretch and spray treatment of active myofascial trigger points and for injecting these areas.

The remainder of the book examines muscles that are not normally within the dentist's area of expertise. Part II covers the muscles of the upper back, shoulder and arm that refer pain to the trunk and arm. Part III describes the forearm and hand muscles while Part IV deals with the remaining muscles of the chest, abdomen and back. Each

part can be easily located with the help of red thumb tabs located in the outer margin of each page. I appreciated having an outline at the beginning of each chapter to highlight the information covered within the chapter.

The authors have provided comprehensive coverage of the topic of myofascial pain in their first volume. However, only a small section of this book provides information that is pertinent to dentistry.

*This book was reviewed by  
Dr. Janet Karp,  
Faculty of Dentistry,  
University of British Columbia*

## PRECISION ATTACHMENTS IN PROSTHODONTICS: THE APPLICATION OF INTRACORONAL AND EXTRACORONAL ATTACHMENTS. VOLUME 1.

Harold W. Preiskel

*Quintessence Books  
Chicago, Ill.  
318 pages*

Precision attachments join partial dentures to crowns to teeth to bone. There are several places where things can go wrong and it is important that we know how to so design a case that there is a good chance of long term success. It is the *consequences* of the use of precision attachments that should interest us, the effects on teeth and tissues. We do not need to be told how attachments attach. To see one and to look at the parts is to understand how one works. It slides or snaps or pops into place and A is joined to B. But what should one do to prevent the cementation of crowns from failing? How does one prevent tooth fracture? What happens to make abutments shift to new positions in the arch, opening contacts? How does one prevent increasing tooth mobility? Will plaque control be possible given the new contours of the teeth that are made necessary by the attachments?

The free-end partial denture is a classic case in point. Some attachments form a rigid junction (there may be a little play, but too little to notice) while others have a built in "stress breaking" ability. Stress breaking is almost always a hinging action that allows movement in an arc directed occlusally. Hinged attachments are used so that the mucosa beneath the denture base will help support the vertical component of occlusal loading forces and will continue to do so over time.

A newly made free-end denture is well supported by the ridge but one does need



to anticipate what will happen when there has been some ridge reduction and the denture wants to settle a little to get the same degree of mucosal support. If there is no ability of the denture to rotate on the abutment tooth (no stress breaking) then the prosthetic teeth have been cantilevered out from the abutment with exactly the same theoretical and practical concerns that one would have if they were the pontics of a cantilevered bridge. Preiskes uses an unfor- giving key-in-slot attachment at the free end "for the majority of restorations" and with such an arrangement no rotation about the abutment is possible. This is too brave and the text makes no adequate attempt to justify this departure from what is normally considered sensible. It is oversimplifying to deal with this by double or triple abutting with splinted crowns. Preiskel seems to be of the "if in doubt, crown it" school; the book is page after page of apparently straightforward cases made complex by expensive demands on the dental laboratory.

It is a shame this book has not been done more intelligently. We need a good text on attachments because the cosmetic demands of our patients are increasing and because overdentures and the use of the Branemark implant system is becoming more usual in general practice. This book is not adequate to our needs. Still, in the Quintessence tradition, it is beautifully printed and illustrated.

*This book was reviewed by  
Dr. Hugh MacKay,  
University of Toronto.*

## **INFRAOCCLUSION OF PRIMARY MOLARS. SWEDISH DENTAL JOURNAL SUPPLEMENT 21, 1984.**

Jüri Kurok

In the literature review section, the author has thoroughly covered all the major publications written in the literature. This background provides the reader with a thorough understanding of the topic of ankylosis.

In the introduction section, the definition of infraocclusion is presented. The author states that infraocclusion is a clinically descriptive term used to indicate a tooth which at the time of full eruption does not reach the occlusal plane. The author also states that ankylosis is one possible cause or is frequently associated with infraocclusion. Furthermore, the term infraocclusion gives a good description of the clinical appearance and therefore has gained increasing use during recent years.

For the most part this recent term, infraocclusion, was a good term of choice used

to describe the condition in certain places in the book, when comparing infraocclusion and ankylosis, the terms have led to some confusion. For example on page 32, the author stated that "no extraction of primary molars because of infraocclusion or suspected ankylosis had been performed". This statement seems to be out of context and needs further explanation. On page 35, the author stated that "the material for histological study of the infraocclusion — ankylosis complex (part V) was large when compared with earlier studies". On page V:3, the term infraocclusion — ankylosis complex is not included in the key word list. The term is introduced on page V:5, however, there is no definition or further description. On page 38, ankylosis and infraocclusion were used clearly to denote different conditions. It is not until pages 94 and 95, that the terms "tooth ankylosis", "ankylosis" and "infraocclusion" are defined and distinguished from each other.

Overall this book describes the topic of infraocclusion in a very thorough manner. This potentially complicated and serious clinical problem should not go unrecognized when treating children. This book goes a long way in improving our awareness and understanding of infraocclusion once the reader has sorted through a number of definitions.

*This book was reviewed  
by Mr. Billy Chiu,  
a Third Year Dental Student  
(at the time of review) and  
Dr. David Richardson, Head,  
Division of Pediatric Dentistry  
at the Faculty of Dentistry,  
Dalhousie University,  
Halifax, Nova Scotia, B3H 3J5.*

## **ESSENTIALS OF PHYSIOLOGY**

J.F. Lamb, I.A. Johnston,  
G. Ingram and R.M. Pitman

*Blackwell Scientific Publications  
Boston, Mass. 465 pages*

A major difficulty in choosing a textbook for a survey course in human physiology is finding one that encourages the students to read it and one to which the faculty will refer. For the student, the book should be short, easy to read and have complex mechanisms explained in simpler terms. The faculty, on the other hand, want a book that will be a good reference, that covers the material in some detail and that is current. Thus, it very often happens that books that appeal to students are not satisfactory for the faculty. Furthermore, if the course is taught by a number of faculty members, it is almost an axiom that no one book will satisfy all of them.

The book, *Essentials of Physiology*, is a

good compromise and for the course with a single teacher, it may be an excellent choice. The book appears to be short but it contains 463 pages of text and diagrams. The print-type is small which makes complete pages of text appear dense, but most pages have one or more diagrams placed within the text and this gives the impression of an easy read.

The authors have taken much of the information found in larger physiology textbooks and presented it in the form of graphs or diagrams rather than words alone. This results in a simpler and more concise presentation but it requires close attention by the reader to get all the information from a section. Many of the diagrams are relatively simple line drawings and many of them are imaginative. Some of the more difficult concepts are set inside of boxes so that they may be referred to separately. The use of red and black tones in the diagrams makes them easier to understand and places them in a nice contrast to the text.

The authors have stated that the objectives from the Physiology Department of the University of Aarhus in Denmark and those from the University of London Board of Studies in Physiology served as their guides for the material they have used. They have organized this material into five Parts: Basic Properties, Maintenance Systems, Communication and Central Control, Reproduction and Integration. The Integration Part includes chapters on hydrogen ion regulation, body fluids and electrolytes, temperature regulation, exercise and circadian rhythms. The only area of physiology that does not appear to be covered is aging. There is an appendix of Useful Data such as physical and chemical definitions, formulae and normal values.

There are no summaries within the chapters or at the ends of them. Neither are there any objectives outlined nor is there a glossary. These features are appearing in textbooks written in North America and intended for junior classes.

The stated aim of this book is a first year course in human physiology at the university or equivalent level. However, this statement may only apply to those students from a British school background, for I am of the opinion that it would be more suitable for students who have had at least some university preparation in biology, chemistry and physics. In other words it would be suitable for dentistry students but not necessarily those in dental hygiene.

I liked the book and would consider using it if I were a sole teacher. I also think that the students would read it since it looks interesting and not overwhelming.

*This book was reviewed by  
Dr. J.D. Dudar*

## THE PERIODONTIC SYLLABUS

Peter F. Fedi, Jr.

Lea & Febiger,  
Philadelphia, Pa.  
\$31.25  
190 pages

The Periodontic Syllabus is a revision of The Periodontics Syllabus which was prepared by members of the faculty in the Department of Periodontics at the Naval Graduate Dental School, Bethesda, Maryland. The syllabus is directed towards the general practitioner. The editor indicates in the preface that this book is not meant to be a textbook, but a manual that explains therapeutic concepts based on biological principles and can be used in a "cookbook fashion".

This revised book has many improvements over the previous edition. The language is more precise and the definitions are formulated better. Periodontal disease in the syllabus is defined as "any pathologic process that affects the periodontium". This includes dental plaque-associated diseases (e.g. gingivitis and periodontitis) as well as non-plaque-associated diseases (e.g. primary occlusal traumatism and malignancies). The systemic factors contributing or modifying periodontal disease are described and there is an up-date of local bacterial factors and mechanisms of bacterial actions. The immune response is mentioned but not discussed in any detail. One would have expected a more extensive review of the host response to bacteria for a proper understanding of the protective and destructive mechanisms at work in the gingiva.

The chapter on wound healing explains the basic processes and guides the reader to the general principles of periodontal surgery, management of soft tissues and osseous defects. The outlining of the different techniques is the strength of this book. There is a good explanation of the reasons for surgical procedures and the contraindications. The summary of treatment of bony defects provides a quick reference.

For the reader who may not have immediately understood the role of occlusion in the beginning of the book, a clarification is given in the chapter on "The role of occlusion in periodontal health and disease". The discussion on periodontal maintenance therapy is a good addition. The omission of a chapter on patient motivation and education leaves a gap. This aspect of periodontal therapy is of great importance to any therapist, whether a student, general practitioner or specialist.

The syllabus could have been more valuable if citations of review papers and/or

original research reports were included. This would stimulate the reader to go beyond the scope of the manual.

This book provides an outline of current therapeutic procedures and will be a valuable source of information for many practitioners.

*This book was reviewed by  
Dr. A.F. Holthuis,  
Faculty of Dentistry,  
University of Manitoba*

## RECONSTRUCTIVE PREPROSTHETIC ORAL AND MAXILLOFACIAL SURGERY

Raymond J. Fonseca and  
W. Howard Davis

W.B. Saunders Co.  
Philadelphia, Pa.  
pub 1986  
526 pp. illus.

For many years, preprosthetic surgery usually meant a group of procedures where an edentulous or seriously compromised jaw was trimmed, "tucked", "plastyed" or otherwise altered with the prospect of somehow making a prosthesis that had virtually no likelihood of ever being functional, acquire a smidgen of positive hope. More often than not, it meant removing more bone from an already depleted ridge or disposing of large amounts of reactive soft tissue that left in the wake of its removal, an alveolus so minimal that retention was only a wishful whim. Various attempts had been made to either augment the residual ridges or, in those instances where there appeared to be sufficient basal bone, to insert or implant an object that projected into the oral cavity and would serve as an abutment or support. At a conference in June 1978 at Harvard, convened to assess the safety and efficacy of dental implants, it was decided that implanted fixtures would be considered clinically successful if they provided functional service for at least five years in 75 per cent of the cases. Regardless of what one thinks of those criteria, there is little doubt that the Harvard Conference firmly legitimized the area of reconstructive preprosthetic repair that this text effectively encompasses.

Let me say at the outset, that while this book deals with surgery that is not within the scope of every dentist, the information that is included, should make it a mandatory addition to every dental general practitioner's library. In an age where it is increasingly difficult to have a comprehensive volume on a current topic, Doctors

Fonseca and Davis have created a goldmine of theory, philosophy and technique, sufficiently well illustrated to be used not only as an adjunct to the written text, but also as an illustrative patient aid.

The book is divided into four sections. The first two divisions, dealing with the basic principles of reconstructive preprosthetic surgery and the management of patients with edentulous bone loss will appeal to everyone faced with the dilemma of trying to rehabilitate the unfortunate dental cripple. The review of the basic anatomy and physiology of bone loss along with the prosthetic and surgical principles being striven for, is presented in moderate detail and unlike similar discourses in other textbooks, does not frighten off the practitioner who may feel that his academic knowledge has become a trifle rusty. The attempt however, to reduce the review of the physical examination to a bite-sized tidbit makes this information ineffectual. Because grafting of both hard and soft tissues has become reasonable basis for reconstruction, there is an extensive chapter on the biologic aspects of transplantation. This chapter deals with a difficult subject intelligently and in an extremely reader-friendly manner.

The chapters on the management of these preprosthetic conundra are a remarkably written and illustrated group of descriptions running the complete gamut from the minor "nips and tucks" of alveolar recontouring and maxillary tuberosity reduction to major reconstruction with bone grafts and a variety of osteotomies that enterprising oral surgeons have technicolour dreams about. The sections on implant use in preprosthetic reconstructive surgery and the uses of hydroxyapatite augmentation are the finest reviews of these controversial areas that I have seen thus far in print. The commentary on these subjects is complete, unbiased and wonderfully informative.

Any textbook on the subject of reconstruction would be remiss if it did not include discussions on the preprosthetic reconstruction of the cancer patient or those individuals who have unfortunately suffered grievous maxillofacial injuries or perhaps have been afflicted with a congenital facial deformity. For the nonsurgeon the obvious benefit of their inclusion is the scope of information that is imparted.

In conclusion, an expensive (\$142.00) but so wonderfully expansive textbook that any practitioner's library that lacks its inclusion has suffered a sorrowful deletion.

*This book was reviewed by  
Dr. J.H. Gryle,  
an oral surgeon practicing  
in Weston, Ontario*



# ESTHETIC COMPOSITE BONDING

TECHNIQUES AND MATERIALS

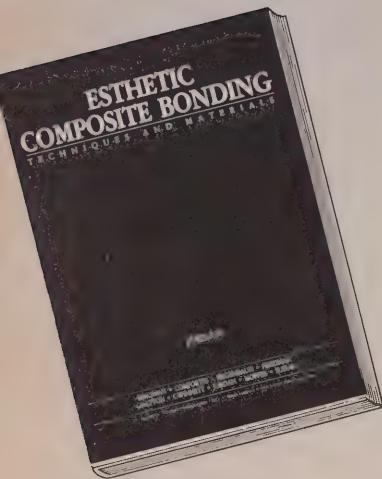
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# Specialty Features

## THE DENTAL PRACTICE WHERE TO LOCATE?\*

**D**avid Jones and Sarah Keller are recent graduates from the School of Dentistry at the University of Bridgetown. They are currently looking for a suitable location to set up a joint practice. Tough economic times, a high dentist per capita ratio and the declining need for dentists has increased the competition among dentists for clients and suitable site location for a successful practice.

### Personal Considerations

Both dentists have identified a desire to live in the city of Bridgetown and, specifically, in the University area. This location is optimum for spouses to commute to their jobs; is located in a middle to upper income area; and, is in close proximity to river valley recreational areas. Access to shopping and schools is relatively easy by car or public transit. The area is also optimal

because the dentists wish to maintain connections with the school of dentistry.

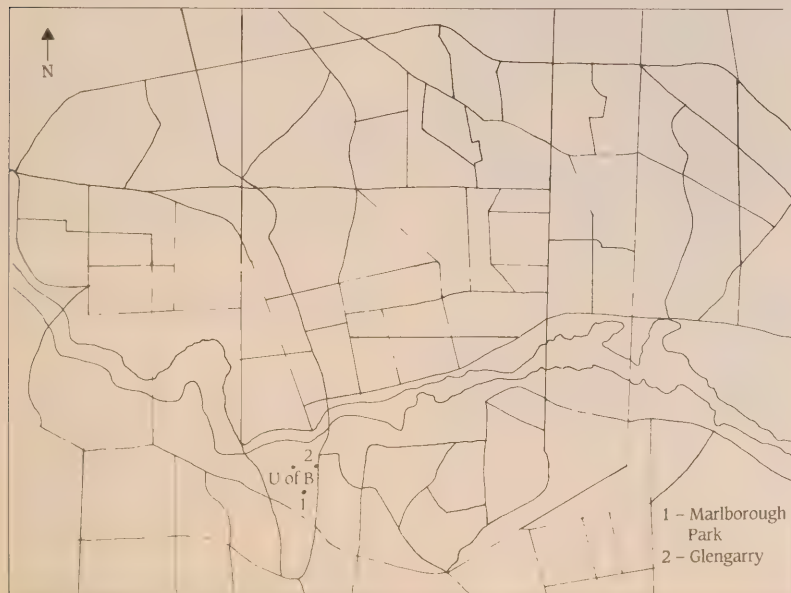
### Site Selection

In choosing a suitable location, David and Sarah obtained the 1985 Metro Bridgetown Market Review put out by the Bridgetown Economic Development Authority (BEDA). The report provides general demographic data on population growth and health and services expenditure for the past five years (**Exhibits 1 & 2**). After studying the report and the environment, it occurred to them that there were very few dentists located in the direct university area. As well, a practice in this area would fit in with their personal goals. Further information from the BEDA provided population breakdowns by age group (**Exhibit 3**) and household breakdown by income level (**Exhibit 4**). The major competition stems mainly from practising dentists in the School of Dentistry as no private dental practices are located directly in this area.

The dentists have identified three possible locations for their practice.

### Students United Building (STUB)

This site (located on campus) is a newly renovated space in STUB at the University



\* While factual, all names, dates and locations in this case are disguised. This case was prepared by Orestine Ostapiuk and Katherine Cottee under the supervision of Dr. Wm. A. Preshing, University of Alberta, Edmonton, Canada, as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative case  
Copyright © 1986 by Wm. A. Preshing



of Bridgetown. The square footage is adequate but no water hook-up exists. The site would provide easy access to a large student market, university staff and some outside clients. The dentists are not sure how many students have dental plans. Most clientele are within walking distance. There is easy access to the site by bus but clients who drive must park in pay parkades which are often congested at rush hours. Lease costs are \$12 sq. ft./annum plus common area and utility costs of \$5.20 sq. ft./annum. The flow of traffic declines considerably in summer when school is out.

### Glengarry

This forty year old site (located approximately six blocks east of the main campus) has the potential to draw clients from several areas as it is in the heart of heavy commuter traffic and in between a commercial and residential district. The specific site

was once a retail store and has water hook-ups and washroom facilities available. Major plumbing revisions are required to accommodate the equipment. Pay parking in the area is limited and easiest access would be by transit. No direct competition exists nearby but dental practices are located some four blocks south of Glengarry. Lease costs are \$10 sq. ft./annum and \$4 sq. ft./annum for common area and utility costs.

### Marlborough Park

The Marlborough site (located approximately eight blocks southeast of the campus) is in a small older strip mall and has excellent access to limited free mall parking. There is only one bus to the mall but transfer service is readily available at the University of Bridgetown transit terminal. The clients would be mainly area residents with some traffic from university staff and students. The lease costs are \$6.50 sq. ft./annum and \$3.65 sq. ft./annum for common area and utility costs. As the site was previously a restaurant, water hook-up and washroom facilities are in place.

At all sites, the startup and equipment costs appear to be the same. Sarah and David will have to assume all installation and renovation costs for the site they choose. They have made a checklist of questions to be answered in site selection.

### Criteria in Site Selection

- Is the type of office space suitable?
- How close are support services such as dental laboratories and specialists?
- How accessible is the office?
- How much parking is available?
- What is bus service like?
- Will the site draw the clientele we want?
- How easy is it to hire staff?
- What is the reputation of the neighborhood?
- What renovations are necessary to the electrical, ventilation, air conditioning and plumbing systems?
- What are the landlord policies in rent provisions in terms of escalator clauses, rent deposits, security deposits, renewal clauses, and leasehold improvements?

### Financing

Sarah and David have very little capital to invest in their practice. The main source of capital will come from a long term bank loan. They have completed an extensive marketing plan and pro forma statements to demonstrate the soundness of their practice to the banker. Once the loan is approved, they will be able to retain an architect to begin initial plans. In the mean time, their main concern is which site they should choose?

## DENTAL PRACTICE CHART

### EXHIBIT 1 POPULATION GROWTH - METRO BRIDGETOWN - 1980-84

| YEAR | TOTAL POPULATION | PERCENT INCREASE |
|------|------------------|------------------|
| 1980 | 676820           | 3.90             |
| 1981 | 716101           | 5.80             |
| 1982 | 727803           | 1.60             |
| 1983 | 739852           | 1.70             |
| 1984 | 741731           | 0.30             |

### EXHIBIT 2 HEALTH AND SERVICES EXPENDITURE - METRO BRIDGETOWN 1980-84

| YEAR | TOTAL EXPEND/PER ANNUM | PERCENT INCREASE |
|------|------------------------|------------------|
| 1980 | 72710                  | -7.00            |
| 1981 | 79989                  | 10.00            |
| 1982 | 80494                  | 0.60             |
| 1983 | 85476                  | 6.20             |
| 1984 | 86473                  | 1.20             |

### EXHIBIT 3 POPULATION BY AGE GROUP - UNIVERSITY AREA - 1980

| AGE   | POPULATION |
|-------|------------|
| 0-14  | 380        |
| 15-24 | 1525       |
| 25-44 | 1900       |
| 45-64 | 830        |
| 65+   | 645        |
| TOTAL | 5280       |

### EXHIBIT 4 INCOME LEVELS - UNIVERSITY AREA - 1980

| ANNUAL INCOME | NUMBER OF HOUSEHOLDS |
|---------------|----------------------|
| < 5000        | 265                  |
| 5000-9999     | 305                  |
| 10000-14999   | 345                  |
| 15000-19999   | 340                  |
| 20000-24999   | 245                  |
| 25000-29999   | 205                  |
| 30000-39999   | 355                  |
| 40000+        | 580                  |

RENDEZ-VOUS  
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Canadian Dental Association  
Convention in conjunction with  
Les Journées dentaires

Congrès de l'Association dentaire  
canadienne conjointement avec  
les Journées dentaires

### CORRECTION

In the March 1987 Editorial, entitled "Capitation: Guilty or Not" written by Dr. John Hardie, a typographical error appeared. The last line should read "The appropriate verdict is the classical example of Scottish canniness - Not Proven."

## Specialty Features

# 1986 FDI ANNUAL WORLD DENTAL CONGRESS MANILA, PHILIPPINES

Robert Hicks, DDS, MS  
National Treasurer — Canada

*Dr. Hicks has written the following as an article for JCDA and as a report to the 1987 Interim CDA Board of Governors meeting. He notes details of the November 9-15, 1986, FDI Sessions.*

The 74th Annual World Dental Congress was opened by a moving and historical address by President Corazon C. Aquino. The President of the Republic of the Philippines extended a warm and sincere welcome to members of the General Assembly and delegates to the congress in her one-half hour address. She displayed her knowledge of preventive dentistry and commended the profession on their worthwhile goal of achieving dental health for the world's population. The President also called upon the dentists of her country and dentists from international locations to work together to help the people of the Philippines work towards this goal in their troubled and impoverished country.

The historic portion of her address occurred when she completed the dental-oriented remarks, turning from the audience



and directing her final remarks to the many television cameras in the Plenary Hall. Her final message was to the people of her country, and particularly to those people who might have been interested in obtaining control of the government after her departure to Japan the following day. President

Aquino delivered a strong message, including the commitment to go to war, if necessary, to protect the independence of the people which, as a country, they work so hard to obtain. I feel most delegates in the audience wished that the President had made these remarks the week after they left the congress rather than the week they were there! However, a very pleasant, peaceful week resulted with all delegates truly indebted to the Philippines' dental community for their wonderful hospitality.

The attendance at the FDI Manila meeting was less than anticipated due to the potential unrest that could develop in the country. Those who attended the congress experienced a happy population with the only signs of unrest surfacing in the media. 1650 international delegates attended with Canada ranking 4th-5th in the preliminary registration statistics.

Canada was represented at the General Assembly of the Congress by a Councillor — Dr. William R. Thompson, by two official delegates — Dr. John Robertson (CDA President) and Dr. Robert Hicks (National Treasurer — Canada) and by two alternate



delegates — Brig. Gen. James Wright and Dr. George Beagrie.

Additional Canadians who participated in FDI Commissions throughout the year as consultants or participants are as follows:

**Commission on Oral Health, Research and Epidemiology**

- Dr. George Beagrie
- Dr. William Bedford
- Dr. Daniel Kandelman
- Dr. Malcolm Williamson

**Commission on Dental Education and Practice**

- Dr. George Beagrie — Chairman
- Dr. E.R. Ambrose
- Dr. D. Donaldson
- Dr. R.B. Gilliland
- Dr. G. Kravis

**Commission on Dental Products**

- Prof. D.S. Smith
- Dr. Frank Pulver
- Dr. Harvey Bridges
- Dr. B.A. Wright
- Dr. Ralph Barolet

**Commission on Dental Forces Dental Services**

- Brig. Gen. James Wright — Vice-Chairman
- Brig. Gen. William Thompson

Canada also played a very active role in participating in the extensive scientific program arranged by the Philippines Organizing Committee. Those Canadians lecturing or making presentations were as follows:

**Main Theme Session:**

- Dr. A. Lowe
- "Undergraduate and Continuing Education in Orthodontics"

**Supporting Lectures:**

- Dr. Allan A. Lowe
- "Three-dimensional Analysis of Tongue Posture"

**Symposiums:**

Commission on Oral Health, Research and Epidemiology

"Low Technology Approach to Dental Care"

- Dr. Murray Dickson
- "Appropriate Dental Training"

Commission on Dental Education and Practice

"Improving Access to Oral Health Care"

Dr. George Beagrie — Chairman

**Free Communication Sessions:**

- Dr. Daniel P. Kandelman
- "Xylitol Chewing Gums in Preventive Program — Effect on Dental Caries"
- "A Collaborative WHO Clinical Field Trial in French Polynesia"
- Dr. R. Go
- "Myofunctional Appliances for the General Practitioner"

Table Demonstrations:

- Dr. G.T. Santander
- "Restoration and Re-Use of Endodontically Treated Teeth"
- Dr. L. Abelardo
- "Preventive Resin Restoration"

**Special Sessions:**

- Meeting of the Deans
- Dr. George Beagrie — Chairman
- International Cooperative Oral Health Development Program (ICOHDP) Progress
- Dr. William Bedford
- "Mozambique — Canada"

The major business activities of the FDI

took place in four main working sessions, i.e. General Assembly A, General Assembly B, the National Treasurers Meeting, and the Open Question Period. While these are the official meeting opportunities for general business of the Congress, informal and/or small scheduled meetings occurred during the week to provide additional discussion and "persuasion" sessions. The following is a brief summary of the main items of interest from General Assembly A and General Assembly B:

**1. Annual World Dental Congress Sites**

The General Assembly approved Vancouver, Canada as the 1994 site of the FDI Annual World Dental Congress. As with all other congress site selections, this invitation presented by CDA is accepted provided that satisfactory agreements can be reached with regard to the congress facilities, hotel accommodations, transportation by the airline and the dental trade exhibition.

A number of other site locations were also approved resulting in the following schedule for future congresses:

- 1987 — Buenos Aires, Argentina
- 1988 — Washington, D.C., USA
- 1989 — Amsterdam, Netherlands
- 1990 — Singapore
- 1991 — Rome, Italy
- 1992 — City not named, West Germany
- 1993 — Gothenburg, Sweden (tentative)
- 1994 — Vancouver, Canada

**2. Elections**

I am pleased to report that Dr. William R. Thompson, Canada, was re-elected to a further two year term as a Counsellor of the FDI. There were seven candidates, and Dr. Thompson received the second highest number of votes on the first ballot.

In addition, I am also pleased to report that the Commission on Dental Forces Dental Services elected Brig. Gen. James N. Wright, Canada, as their Vice-Chairman, and the Commission on Oral Health, Research and Epidemiology re-elected Dr. George Beagrie, Canada, as their Chairman.

**3. Finances**

A large part of the General Assembly meetings plus the associated National Treasurers meeting and the Question Period dealt with the troubled finances of the FDI. In past years, the Assembly has refused to increase individual membership dues and the attendance at the past two FDI Annual World Dental Congresses has been disappointing. These factors together with the fact that the value of the US dollar (the source of FDI funding) has decreased significantly in Great Britain, has resulted in a lower level of income than expected. However, current expenditures were reduced and the annual financial statements showed a modest excess of revenue over expenditures.



CDA President Dr. John R. Robertson is seen chatting with two Filipino dentists during the International College of Dentists Luncheon in Manila (Nov. 8).

The Finance Committee, chaired by the Treasurer, emphasized the need to obtain substantial income from outside sources. Corporate fund-raising and increased solicitation of new members will be initiated. It was also recommended that a very conservative approach was needed when selecting the exchange rate (British Pound vs US Dollar) for the preparation of the annual budget. To provide a certain edge against currency fluctuations, the Assembly amended the Regulations to permit the following:

- Subscriptions of member association shall be payable on the basis of the value of the pound sterling on January 1st of that year.

- Subscriptions of supporting members shall be payable on the basis of the value of the US dollar on January 1st of that year.

The implementation date of these changes will be at the time considered to be most opportune by the Federation's financial advisors.

The 1987 budget showed an increase in expenditures of 11.8%. This increase was centred mainly on the headquarters office expenses due to the increased activity of the Federation. The total 1987 budget expenditure is US dollars \$851,000.

Since the congress and supporting membership revenue is projected to be lower than usual once again in 1987, the Finance Committee found it necessary to shift more of the revenue requirements on to the Supporting Member Associations until increased revenue from corporate funding and increased supporting membership can be realized. This resulted in a 32.86% increase in 1987 subscriptions for each Supporting Member Association. Canada suffered further by an updating of their "formula data" which resulted in a total 81.2% increase in our 1987 Annual FDI subscription. A supplementary report is attached to this report which explains this increase in more detail.

Considerable debate resulted over the five days between the two Assembly meetings but in the final vote on the budget, all nations agreed that the budgetted expenditures were reasonable, the program activities were needed, and the large increase in Supporting Member Association subscriptions (according to the existing formula) were necessary. However, the following two changes in 1987 revenue were approved:

- The subscription of Supporting Members be increased from US dollars \$18 to \$22 from January 1, 1987.

- The subscription to the International Dental Journal be increased from US dollars \$27 to \$38 effective January 1, 1987.

Affiliate Member Association subscriptions were also increased from \$150 to

\$250, and from \$250 to \$350. In addition, to discourage late payment of Member Association subscriptions, which are due January 1, 1987, the following amendment to the regulations was also made:

- Interest of 10% per annum shall be charged on subscriptions not received by March 31st.

#### 4. Technical Reports

The following FDI Technical Reports were presented to the General Assembly and were approved:

- Topical and Systemic Anti-microbial Agents in the Treatment of Chronic Gingivitis and Periodontitis

- Guidelines for Antibiotic Prophylaxis of Bacterial Endocarditis for Patients with Cardiovascular Disease

- Guide to the Use of Glass Ionomer Filling Materials

#### 5. Information Reports

The following Information Reports were approved by the General Assembly:

- Dentistry as a Profession

- Recommendations for Hygiene in Dental Practice including Treatment for the Infected Patient

- Guidelines for the Additional Training of Dental Officers in Connection with the Treatment of Those Injured in Disaster Situations

#### 6. New Business

The main item of new business from the floor of the General Assembly was a motion (passed) to establish a Task Force to review the objectives and future activities of the FDI. This Task Force will report back to the General Assembly in Buenos Aires, in 1987. The five members on the Task Force are:

Dr. John Bomba, Chairman — USA

Dr. R. Duckworth — Great Britain

\* Dr. William Thompson — Canada

Dr. Thorsten Aggerud — Sweden

Dr. Norman Whitehouse — Great Britain

The underlining intent of this motion is to have a serious review of the objectives, activities, administration, purpose and related cost/revenue of the FDI. The creation of this Task Force reflects the overall concern of all countries in FDI that individual memberships are decreasing, attendance at "low interest" Congress sites is decreasing and increased budget requirements are creating increased financial responsibilities for supporting countries.

While individual voices are often lost in the expansive arena of a world organization until the individual is recognized as a "player" (i.e. Dr. William Thompson — Canada), the writer of this report was pleased to see the General Assembly as a whole desired to have an in-depth look at FDI to see whether it is performing what is expected of it as a true international dental organization.

  
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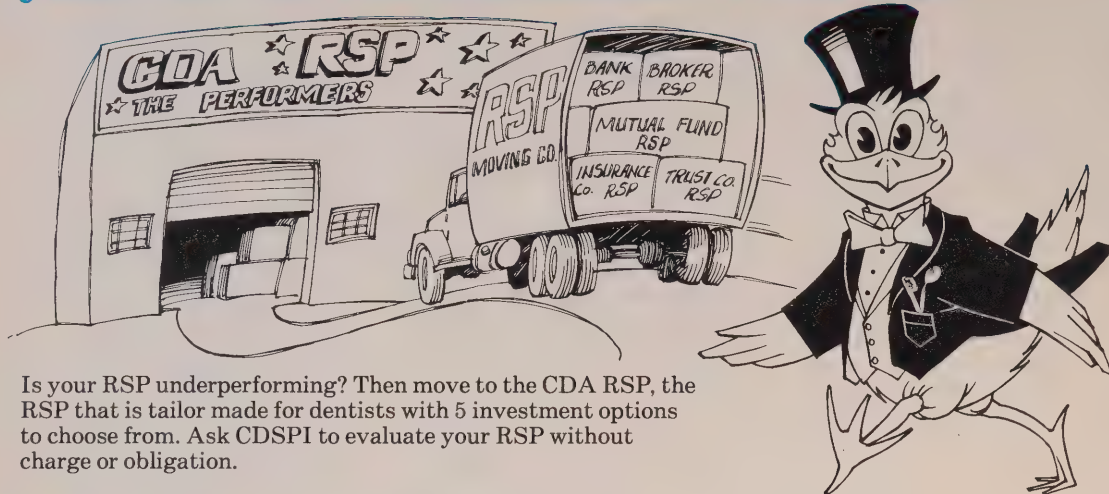
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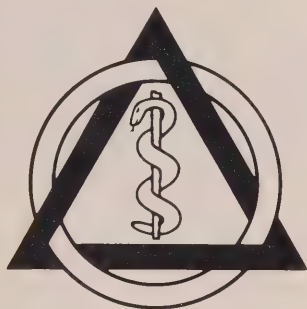
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The CDA's Taxation Seminars will be chaired by Dr. Robert N. Hicks of West Vancouver, B.C. — Chairman of CDA's Taxation Committee, with tax lawyers, tax accountants, customs brokers, etc., featured as lecturers. Current plans will see seminars in Halifax and Vancouver during 1987.

CDA members outside of these provinces are encouraged to contact the CDA Office (613-523-1770) if they are interested in receiving registration and program information.

Detailed information will be sent to CDA members in their respective provinces or in provinces that neighbour, or are close to, these locations at a later date.

# Clinical Features

# PATIENT PERIODONTAL REPORT

Murray L. Arlin, DDS, FRCD(C)

**Editor's Note** The following article discusses a pamphlet folder, entitled "Periodontal Report" which was designed and developed by Dr. Murray Arlin, a Weston, Ontario periodontist, for use by patients in his periodontal practice. Dr. Arlin, who developed both the content and the format of the pam-

phlet did so to help his patients remember where their particular problem areas lie.

"I wanted the patients to have something to take home with them, following the visit, so that the patients would be aware of their status and the illustrations showing problem areas might make home care easier," Dr. Arlin told the Journal.

To date, Dr. Arlin says he has received many positive comments on the pamphlet from his patients, but no negative ones. Although it was developed for use in a periodontal practice, it could be adapted for use by the general practitioner.

"Dentists who wish to adapt this design or idea to their own practices will find that it is a handy little thing to have for patients, and so far, my own patients appear to appreciate it."

Those readers who do wish to adapt or use any part of the pamphlet, including the illustrations, must obtain written permission from Dr. Arlin, who holds the copyright to the brochure. Please write to Dr. Arlin, at 1436 Royal York Rd., Suite 209, Weston, Ontario, M9P 3A9 to obtain permission to use all or part of the leaflet.

## The Patient "Periodontal Report"

The patient "Periodontal Report" is intended to be given to the patient following his or her initial examination and after each recall visit. In this article a format that has been designed for a periodontal practice will be described (although modifications could be made to suit the Report to general practice).

When printed on both sides of an 8½ × 11" sheet, the Report can be folded into three sections such that a brochure effect is created (Fig. 1, 2, 3). The printed sheets can be packaged in pads of 100 and it is suggested that the pads be kept in each treatment room for convenient access to encourage routine use. The report has specifically been designed in a "check-off" and "fill in the blank" format so that it can be completed in just a matter of seconds.

The Periodontal Report (i) indicates the office services performed (Fig. 3) (ii) diagrammatically illustrates problem areas requiring special patient attention

Fig. 1.

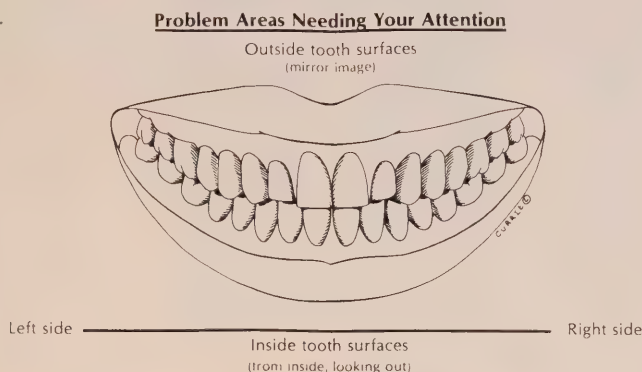


Fig. 2.



- Your periodontal health is: ☐ Excellent ☐ Stable ☐ Deteriorating
  - Your plaque control is: ☐ Excellent ☐ Fair ☐ Needs much improvement
  - Next appointment with Dr. \_\_\_\_\_ is due \_\_\_\_\_ for \_\_\_\_\_
  - Next appointment at our office is due \_\_\_\_\_ for \_\_\_\_\_
- (See our "Estimate-Treatment Plan Form" for more details)



(Fig. 1) (iii) summarizes the overall periodontal-oral hygiene status (Fig. 2), and (iv) functions as a written reminder to the patient as to when his/her next appointments are due with the periodontist and referring dentist.

The advantages of this type of report include (a) enhanced patient education and communication (b) a written summary of the dental treatment performed, and (c) being an excellent practice-building mechanism due to the positive reactions from many patients receiving this report.

In summary, the periodontal report by virtue of its design is convenient to incorporate and can be an excellent adjunct in providing quality care.

The author wishes to acknowledge Dr. L. Schwartz's help in designing the Periodontal Report.

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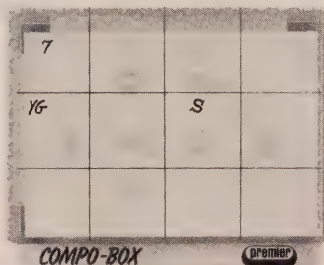
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- ☐ Consultation
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  - ☐ medical
  - ☐ dental
- ☐ Written report
- ☐ Oral hygiene instruction
  - ☐ tooth brush
  - ☐ floss
  - ☐ rubber tip
  - ☐ proxa-brush
  - ☐ other \_\_\_\_\_
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Fig. 3.

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## TRAUMATIC HERNIATION OF THE BUCCAL FAT PAD CASE REPORT

Melvyn J. Kellner, BA, DMD  
Toronto

### ABSTRACT

*A case of herniation of the buccal fat pad into the oral cavity secondary to trauma is presented. A review of the literature reveals that all reported cases were in infants or young children. Most occurred as a result of penetration of the buccal mucosa and buccinator muscle with a foreign object from within the mouth. The timing of the patient's presentation and an adequate history are emphasized as important factors in diagnosing this uncommon injury. Treatment usually is excision of the mass, although cases have been reported where the fat tissue was replaced in its anatomic position.*

### SOMMAIRE

*Voici un cas d'hernie de la boule graisseuse de Bichat, dans la cavité buccale, à la suite d'un traumatisme. En revoyant les publications parues sur le sujet, on découvre que tous les cas signalés le sont chez des bébés ou de jeunes enfants. La plupart des hernies se sont produites après qu'un objet étranger eut pénétré dans la muqueuse buccale et le muscle buccinateur. Pour le diagnostic de cette blessure peu fréquente, il convient que le patient se présente chez un dentiste à temps et rapporte les faits avec précision. Le traitement habituel en pareil cas est l'excision de la masse, mais on a signalé des cas où l'on a remplacé les tissus gras dans leur position anatomique.*

An 18-month-old female presented to the Emergency Department immediately after her mother noticed a mass in the child's mouth. Six days prior to her presentation the child had fallen while playing, resulting in bleeding from the mouth. This subsided spontaneously and no treatment was sought. Further questioning revealed that the child had a comb in her mouth at the time of injury. Other than noticing the mass, the mother stated that the child seemed well. Her past medical history was negative.

Examination revealed a well developed, well nourished 18-month-old female in no acute distress. There was an irregularly shaped 2 cm in diameter, pedunculated, pink mass attached to the right buccal mucosa and located approximately 1 cm posterior to the opening of Stensen's duct (Fig. 1). It was lobulated, firm, non-pulsatile and did not blanch with pressure. It did not seem fluid filled. There were several darker coloured necrotic-appearing areas where the lesion was obviously being traumatized by the occlusion. The remainder of the physical examination was normal.

The patient was taken to the operating room and the lesion was easily excised under general anesthesia. The tissue remaining at the stalk appeared to be lobules of fat. The incision was closed primarily; healing was uneventful.

The histologic sections demonstrated

lobules of fat with fibrous septae and an inflammatory infiltrate. There was no epithelial lining on its surface (Fig. 2). Based on the history, clinical impressions at surgery and the histological appearance, the diagnosis of traumatic herniation of the buccal fat pad was made.

### Review of Literature

Sicher and Du Brul<sup>1</sup> describe the buccal fat pad of Bichat as a round, biconvex structure located between the anterior border of the masseter muscle and the lateral surface of the buccinator muscle. This fat tissue has extensions which occupy the spaces between the muscles of mastication. It is particularly prominent in infants, is felt to



Fig. 1. Clinical appearance of lesion on right buccal mucosa.



aid in suckling, and has been referred to as the 'suckling pad'.

Wolford et al<sup>2</sup> found five cases in the literature prior to their report. In addition, a seventh case was reported by Peacock and Kessel<sup>3</sup> in 1985. Marano et al<sup>4</sup> reported a case of herniation of buccal fat into the maxillary sinus secondary to fracture of the zygomaticomaxillary complex.

The patients ranged in age from five months to four years. The majority of cases involved trauma caused by foreign objects in the mouth. Six cases were treated by excision; in two cases the tissue was replaced in its anatomic position with primary closure.<sup>5-9</sup>

## Discussion

Traumatic herniation of the buccal fat pad into the oral cavity is a rare phenomenon. The patients have all been infants or young children. The majority of cases involved a foreign object in the mouth, which subsequently caused the penetrating injury through the mucosa and buccinator muscle.

In instances where treatment was sought immediately after injury, the mass has been easily recognized as tissue from the buccal fat pad, due to its well recognized appearance. In cases where there was a delay in seeking treatment, as in the case reported here, the inflamed, indurated or necrotic appearance makes the clinical diagnosis more difficult. Wolford lists a differential diagnosis that includes fibroma, neuroma, lipoma, hemangioma, salivary neoplasm, along with the malignant counterparts of these lesions.

The most important factor in arriving at the preoperative clinical diagnosis is the history. In the case presented here, the history

of trauma was not initially elucidated. Upon further questioning, the mother related the incident involving trauma with a comb. This considerably narrowed the possibilities, with traumatic herniation of the buccal fat pad most likely.

**Dr. Kellner** is an oral and maxillofacial surgeon practising in Toronto and on the staff at York Finch General Hospital and Humber Memorial Hospital and a Member of the Royal College of Dentists in the specialty of oral surgery.

Reprint requests to **Dr. Kellner**, 1920 Weston Road, Suite 209, Weston, Ont. M9N 1W4.

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**Fig. 2.** Photomicrograph of lesion. Lobules of fat with fibrous septae and inflammatory infiltrate are evident (H and E stain).

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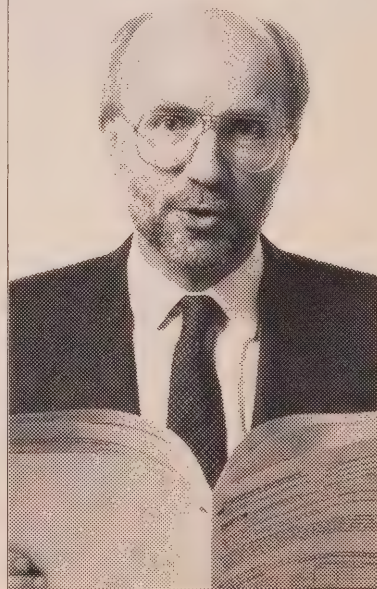
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# MALIGNANT HYPERTHERMIA AND THE DENTAL PRACTITIONER

M.M. Galanter-Mosielski, DMD  
J. Hardie, BDS, MSc, FRCD(C)  
C.B. Cattran, MD, FRCPC)  
Ottawa, Ont.

## INTRODUCTION

*Malignant hyperthermia is a potentially fatal genetic condition with up to 70 per cent mortality<sup>1,2</sup> if not recognized soon enough and not treated aggressively. The transmission is thought to occur by an autosomal dominant gene but may also be poly-genetic.<sup>3</sup> The condition may appear at any age although rarely in the infant or geriatric population. It affects mostly caucasians although some cases have been reported in black and Oriental races.<sup>4</sup>*

## AVANT-PROPOS

*L'hyperthermie maligne est un désordre de caractère génétique qui peut être fatal — le taux de décès s'élève à 70 pour cent — s'il n'est pas découvert assez tôt et traité agressivement. On croit savoir que ce désordre est transmis par un gène autosomique dominant, mais il pourrait être également d'origine polygénique. Il peut se manifester à tout âge, mais il est rare qu'il se produise chez les bébés ou les personnes âgées. Il atteint surtout les Caucasiens, mais on a signalé des cas parmi les Noirs et les Asiatiques.*

## Etiology

According to Britt,<sup>5</sup> the triggering agent (most often halothane and succinylcholine) induces a sudden release of calcium from defective calcium-storing membranes to the cell myoplasm. The increased level of myoplasmic calcium activates phosphorylase kinase and myosin ATPase and inhibits troponin. There is a rapid production of lactic acid from glycogen, larger than normal utilization of oxygen and depletion of ATP which results in myofibrillar contraction. All these reactions produce the heat

that is characteristic of the malignant hyperthermia (MH) crisis. There is also a loss of potassium, magnesium, phosphate, enzymes and myoglobin, with calcium uptake inducing a neurological tetany which unbalances the cell metabolism. The depletion of ATP (which is necessary for the uptake of calcium by the sarcoplasmic reticulum) elevates the myoplasmic calcium. In addition, serum CPK (creatine phosphokinase) is higher than normal in MH-positive individuals. Britt states that the sarcolemma may be porous enough, even in the absence of a triggering agent, to allow large molecules to leak from the muscle cells. This may prove why two-thirds of the patients studied had abnormalities of the musculoskeletal system.<sup>6</sup> Patients with scoliosis, lumbar lordosis, muscle asymmetry, thoracic kyphosis, large increase in muscle bulk, cramps occurring spontaneously or associated with exercise and hypermobility of joints and joint dislocations, raise the index of suspicion with regard to MH reaction.<sup>4,6</sup> Acquired diffuse muscle disease such as polymyositis may also induce MH, which may explain a history of normal general anesthesia prior to the development of bone and muscle pathology. In addition, rigorous exercise or muscle trauma before anesthesia may lead to the development of MH in genetically predisposed individuals.<sup>7</sup>

## Symptoms of Malignant Hyperthermia Crisis

The earliest symptoms are unexplained tachycardia,<sup>8</sup> cardiac arrhythmia, hyperventilation, unstable blood pressure, dark venous blood in the operating field despite an increase in oxygen intake,<sup>9</sup> and eventual muscle rigidity. If masseter muscle rigidity occurs as an early symptom, intubation may be difficult.<sup>10-12</sup> The laboratory

findings include metabolic acidosis, hyperkalemia, an elevated serum CPK followed by myoglobinemia, myoglobinuria, with final stage renal failure, hypotension, pulmonary edema and death. Body temperature may rise 1° C every five minutes, until either the episode is reversed or death occurs.

## Treatment

Until recently, treatment was empiric and included cessation of anesthesia, administration of oxygen and re-establishment of electrolyte balance, external cooling by submersion and cold water, and internal cooling by gastric and peritoneal lavage.

The biggest breakthrough was the administration of the muscle relaxant, Dantrolene, a hydantoin derivative, chemically related to Dilantin,<sup>13</sup> which blocks the release of calcium ion from sarcoplasmic reticulum. Dantrolene has been available in tablet form since 1972 for the treatment of some muscular dysfunctions.<sup>6,14</sup> Since 1978, the intravenous preparation of Dantrolene has been the drug of choice for the treatment of an MH crisis.

Traditionally, it has been stated that amide-based local anesthetics could induce an MH crisis, and therefore dentists were required to use less effective ester type anesthetics or pre-medicate known or suspected MH patients with 25 mg of oral Dantrolene, four times a day prior to appointment and four doses on the day of appointment. The prophylactic Dantrolene allowed 2 per cent lidocaine plain or 2 per cent carbocaine plain to be used.<sup>15</sup> The relaxing effect of this drug dictated that patients be accompanied to and from the dental office. Recent studies have demonstrated that amide local anesthetics without adrenaline are probably not triggering agents.<sup>15</sup> Thus, plain amides may be used without Dantrolene pre-medication for



minor treatment of non-apprehensive patients.

The above protocols may be used in the private dental office when the contemplated treatment or surgery is minor and the patient is cooperative and free from apprehension. If treatment involves the use of regional nerve blocks or extensive gingival surgery, the above approaches may be adopted but in a hospital-based dental facility. A very anxious or nervous patient or one requiring extensive surgery, such as wisdom tooth extraction, requires a hospital admission for 24 hours pre-treatment with Dantrolene, general anesthesia with a non-triggering neuroleptic agent, and close supervision pre-, during and post-treatment.<sup>15</sup>

## Nitrous Oxide Analgesia

According to Krakowiak and co-workers,<sup>3</sup> N2O is the third (after halothane and succinylcholine) anesthetic agent most likely to induce an MH crisis, and it is essential to take an accurate medical history of patients being treated.<sup>16</sup> A case has been reported by Ellis et al<sup>17</sup> of an 11-year-old girl who had a history of death in her immediate family due to MH crisis. She was pre-medicated with diazepam, induced with thiopental, then maintained with 70 per cent N2O and 30 per cent O2. Shortly thereafter her body temperature rose 2° C and

the procedure was terminated. Cold blankets were applied and dexamethasone prescribed. After a few weeks, another attempt was made using only N2O and O2. Again her body temperature was elevated and the analgesia was terminated. There was some controversy whether the anesthetic machine was contaminated with traces of another anesthetic agent. This case report is a reminder that N2O has properties of a general anesthetic and should be used with caution in patients having personal or family histories of malignant hyperthermia. However, N2O, provided it is administered in effective doses, is considered safe for MH patients.<sup>15</sup>

## Summary

To date, there are no non-invasive tests which will accurately predict a patient's susceptibility to an MH crisis, but muscle biopsy with halothane-caffeine contraction testing is 90-95 per cent predictive. However, a knowledgeable physician may employ clinical signs, family history and laboratory tests, to assign patients to a high-risk category.

Current knowledge suggests that MH susceptible patients may be treated in the dental office provided certain requirements are fulfilled. Nevertheless, the practitioner should refer all high-risk patients to an appropriate dental facility.

**Drs. Galanter-Mosielski, Hardie and Cattran** are on the staff of the Departments of Dentistry and Anaesthesia, Ottawa Civic Hospital, 1053 Carling Avenue, Ottawa, Ont. K1Y 4E9.

Reprint requests to **Dr. Hardie**.

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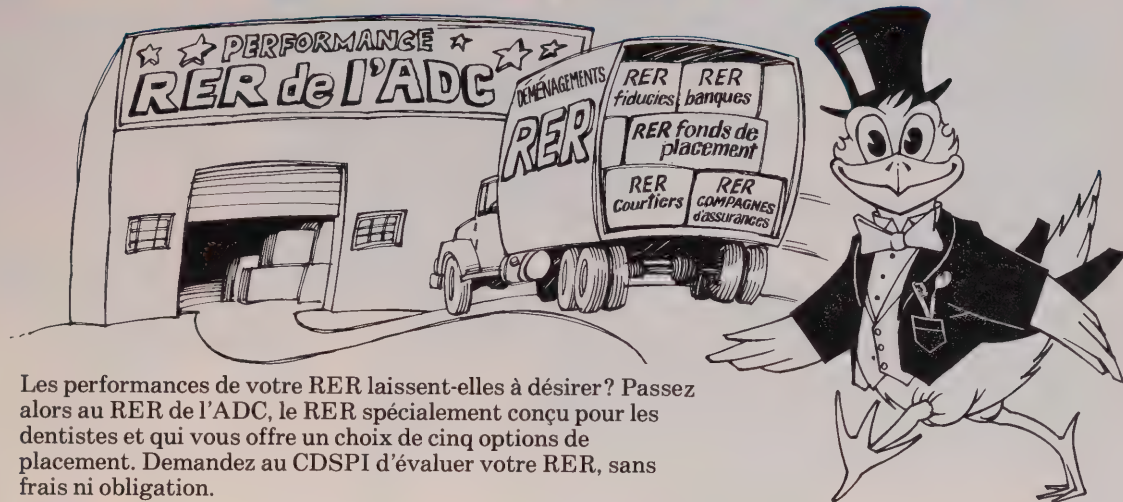
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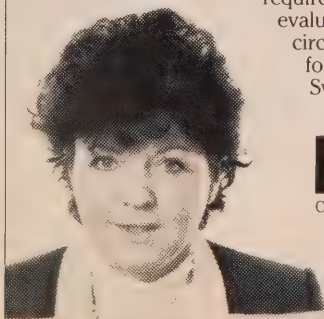
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# Scientific

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## CARE OF THE PREGNANT PATIENT

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### INTRODUCTION

*Dentists throughout their professional careers will face the responsibility of providing appropriate care for the pregnant woman. An understanding of the normal physiological changes occurring in the gravid patient and the temporal pattern of development of the fetus are essential for the practitioner's ability to deliver treatment with optimum safety to both mother and child. This article will review some of the basic physiological changes that occur during pregnancy and fetal development, and how they may influence dental care.*

### AVANT-PROPOS

*Durant leur carrière, les dentistes doivent parfois donner des soins spéciaux à des femmes enceintes. Pour administrer ces soins en toute sécurité tant pour la mère que pour l'enfant, le dentiste doit bien comprendre les changements physiologiques qui se produisent normalement chez la femme enceinte ainsi que la manière dont le fœtus se développe durant la gestation. Dans cet article, on explique les changements physiologiques fondamentaux qui se produisent durant la grossesse et le développement du fœtus et on indique comment ils peuvent influencer les soins dentaires.*

### The Gravid Female

During the human gestation period which encompasses some 40 weeks, various systemic alterations occur in the mother secondary to endocrine changes.<sup>1,2</sup> These changes, combined with the presence of the gravid uterus, result in conditions affecting the various systems of the mother which must be considered by the dentist.

#### A. Cardiovascular System

As a result of increasing levels of glucocorticoids and aldosterone, water is retained. This results in an increase in blood volume as high as 40 per cent (1.5 litres). Accompanying this is an increase in cardiac output (30-50 per cent at 2 months), tachycardia, functional murmurs, increased venous pressure and vasomotor instability.<sup>3,4</sup> Vasomotor instability usually predominates during the first trimester, predisposing the individual to episodes of syncope and postural hypotension. Episodes occur after prolonged sitting, lying or inactivity, and may therefore be induced in the dental office.<sup>4</sup> Avoidance of these attacks may be achieved by having short appointments and avoiding sudden and rapid changes from a reclining to upright position.

In the third trimester (after 28 weeks), the gravid woman may suffer from the "supine hypotensive syndrome" or aortocaval com-

pression syndrome. It is characterized by acute hypotensive episodes, with or without the loss of consciousness, resulting from compression of the inferior vena cava by the gravid uterus. This problem may occur when the patient is in the supine position in the dental chair and is obviously preventable by avoiding placement of the patient in such a position. It is treated by placing her in the left lateral supine position and elevating the lower extremities.<sup>3,5</sup>

Most edema, which is a manifestation of the increase in venous pressure in the latter period of gestation, is of no major significance. The edema of toxemia is, however, a significant manifestation of a severe disease. Toxemia is a disease of uncertain etiology which affects the kidneys and vascular system. It usually commences in the last trimester and is dramatically improved after parturition. It is characterized, in addition to edema, by hypertension, proteinuria and CNS hyperexcitability culminating in convulsions. Toxemia with convulsions is termed eclampsia. Pre-eclampsia denotes a milder, non-convulsive form. Up to 20 per cent of pregnant women develop this problem, *prima gravidas* being more commonly affected. Headache, vertigo, malaise and nervous irritability are the early signs of pre-eclampsia and in part are due to cerebral edema. Scintillating scotomas and visual impairment occur also as a result of retinal



edema, hemorrhage and detachment. Mild epigastric pain, nausea, vomiting, hepatic enlargement and tenderness may occur owing to congestion and thrombosis of the portal system and/or subcapsular hepatic hemorrhages. Most patients are diagnosed prior to the development of severe symptoms and are under strict medical management, including sodium-restricted diets, diuretics and anti-hypertensive agents.<sup>4</sup> Patients with undiagnosed toxemia or those who are aware but require emergency dental care may present themselves to the dentist. In such circumstances, consultation with the physician is mandatory. The avoidance of anything which could exaggerate hypertension and precipitate a convulsive episode is paramount.

### B. Respiratory System

Increased metabolic demands imposed by the developing fetus and physiological changes result in increasing oxygen requirements, often leading to mild hyperpnea. Of more concern to the dentist is the potential to precipitate dyspnea when the patient is placed in the supine position. This commonly occurs during the second and third trimesters and results from uterus pressure upon the diaphragm.

### C. Gastrointestinal System

A major problem of the gravid patient is the nausea and vomiting associated with pregnancy, known as "morning sickness". Episodes usually begin about the fifth to sixth week and persist into the fourth month. A continued problem past the fourth month is referred to as "hyperemesis gravidum" or pernicious vomiting.<sup>4</sup> It is a serious threat to both mother and fetus and usually requires hospitalization. Typical morning sickness is self limiting. The etiology is unknown although some postulate it to be due to decreased gastric motility, changes in the closing mechanism of the cardiac sphincter or a decrease in maternal carbohydrate consumption leading to ketosis. Emesis is most common in the morning upon rising. However, it can be precipitated at any time by odours associated with certain foods and medicines. The dentist should be aware of the temporal pattern of its occurrence for a particular individual and schedule appointments accordingly, as well as avoiding precipitants.

Pyrosis and constipation are gastrointestinal problems associated with the latter part of pregnancy. Pyrosis (heartburn) occurs as the result of gastrointestinal regurgitation, which is aggravated by the displacement of the stomach and duodenum by the uterus. Constipation, common during pregnancy, results from decreased gastric motility secondary to increasing levels of steroid sex

hormones and due to pressure by the enlarging uterus. Both of these entities add to the patient's discomfort in the dental chair.

### D. Urinary System

Urinary frequency, urgency and stress incontinence are common in advanced pregnancy. They can be a source of additional discomfort for the patient confined in the dental chair, as well as a source of embarrassment for both patient and dentist. The gravid patient is also more prone to recurrent urinary tract infections.

### E. Musculoskeletal System

Almost all gravid women suffer from some degree of lumbar back pain, especially during the last trimester, largely resulting from the weight of the fetus. After the first trimester, muscle cramping in calves, thighs and buttocks may occur suddenly. This phenomenon is thought to be due to a reduction in the level of serum calcium, compounded by a sluggish circulation.

It becomes obvious that for the gravid patient who is healthy and exhibits no complications, routine dental care would not be contraindicated if one considers the mother alone. The deciding factor rests, however, with the influence such treatment may have on the developing fetus.

## The Fetus

Fetal development is divided into three stages:<sup>1,2</sup> (1) the fertilization and implantation period, (2) the embryonic period, and (3) the fetal period. The first period extends from conception to about the 17th day of gestation and is a period during which there is marked cellular mitotic activity. At this stage all cells of the fetus are equally sensitive to toxic substances which may precipitate spontaneous abortion.<sup>6</sup> The second period (18-55 days), which is characterized by organogenesis, is one in which exposure to teratogens may result in functional and morphogenic malformations.<sup>7</sup> The third, and final period (56 days until parturition) reflects a time during which there is growth and development of the fetus. Although there is more resistance to teratogenic induction in this period, growth and development may be affected and direct toxic events may occur.<sup>2,8</sup> Of major concern to the dentist with respect to fetal development is the dysmorphogenic potential of diagnostic radiographs and pharmacological agents.

Radiographs are an indispensable component of accurate diagnosis. Doses greater than one rad during early development, i.e., the second to sixth weeks, have been found to cause malformations.<sup>2</sup> The maximum permissible dose that a fetus is allowed to absorb is 5 rads.<sup>9</sup> With lead aprons in place, the female gonadal dose from a single

periapical radiograph is approximately 0.1 millirad.<sup>10</sup> Exposures of less than one rad approximate background levels and are therefore inconsequential.<sup>2</sup> It would seem apparent that oral radiographs should not be withheld when needed for diagnostic purposes. Fast films, decreased exposure times and shielding aid in reducing potential exposure.

The exposure of the pregnant woman to drugs results in fetal exposure, since almost all drugs pass the placenta.<sup>9,11</sup> Whether a drug will subsequently exhibit dysmorphogenic effects depends on a number of variables. These include the drug's physical properties, e.g. lipid solubility, its concentration, duration of administration and, most importantly, the period of development during which it is administered. The critical period of greatest teratogenic susceptibility is the first trimester, with the second and 14th weeks being extremely important.<sup>3,6,11</sup> Major malformations occur in 2 to 3 per cent of all births. It has been estimated that 10 per cent of these are due to environmental causes, including drug administration, 25 per cent are due to genetic and chromosomal aberrations and 65 per cent of unknown or multifactorial causes.<sup>12-14</sup> Rao<sup>15</sup> has suggested that at least 5 per cent of all birth defects are drug induced. The female is often unaware of her pregnancy during this most critical time, as she is only about one week late for her menses. For this reason, it is important that the practitioner question all women of child-bearing age regarding the presence or possibility of pregnancy. Pharmacokinetics during pregnancy change with the profound physiological changes. Although it is impossible to provide a blanket review for all drugs, important changes are presented. The placenta is a physiologically and metabolically active organ from the third week onward. The only drugs not readily crossing it are larger molecules (greater than 600 Daltons) and less lipophilic ones.<sup>2</sup> Furthermore, fetal hemoglobin concentration is 50 per cent greater than the mother's, allowing lipophilic drugs to reach a higher concentration for a longer duration.<sup>5</sup>

Maternal changes affect the availability of drugs to the fetus. Drug absorption from the gut is increased due to decreased GI motility. Since the mother's plasma volume is increased by 30 per cent or greater, the volume of distribution of drug is increased. This, along with a lower plasma protein concentration, results in reduced concentration of available drug with a longer half-life. Hepatic oxidation and renal excretion of drugs are enhanced, leading to increased clearance rates of drug from the body.<sup>16</sup> Boobis and Lewis<sup>17</sup> conclude that in the



administration of drugs with a narrow therapeutic ratio, an adjustment of dosage based on plasma levels is required. Drugs with a wider margin of safety may not require a change in dosage regimen.

A review of drugs commonly used by the practitioner serves as a general guide.

**A. Anesthetics:** General anesthetics are widely considered to be safe. The use of nitrous oxide is not recommended on the basis of studies that suggest an increased rate of spontaneous abortion.<sup>18</sup> Local anesthetics are considered safe unless toxic levels are administered. Although they rapidly cross the placenta, maternal and fetal blood concentrations are usually low.<sup>7</sup> Bupivacaine is more highly protein bound, requires less administration, and is more rapidly eliminated than mepivacaine and lidocaine, thereby making it theoretically safer.<sup>8</sup> The use of a vasoconstrictor in dentistry for the pregnant patient has not been studied. Epinephrine has been suspected of causing malformations,<sup>9,19</sup> although in these reports the dose was not indicated. In light of the current uncertainty, it would appear prudent to avoid local anesthetics with vasoconstrictors for shorter procedures. However, for longer procedures, one must balance the avoidance of vasoconstrictors against the strong physiological stresses of pain, should the anesthetic be inadequate. Under this circumstance, the use of a vasoconstrictor would appear to be justified.

**B. Analgesics:** ASA in regular doses poses little risk.<sup>7,20</sup> Higher doses of ASA and stronger non-steroidal anti-inflammatory drugs (NSAID's) have been implicated in premature closure of the ductus arteriosus and fetal pulmonary hypertension.<sup>6</sup> There is an increased risk with aspirin taken late in pregnancy of increased ante- and postpartum and fetal bleeding.<sup>9</sup> Acetaminophen is relatively new and unreported in the literature but appears to be the analgesic of choice.<sup>6,9,15</sup> Narcotic analgesics appear to be safe for short-term use,<sup>11</sup> but prolonged maternal use results in low birth weight, severe respiratory depression and fetal withdrawal symptoms at birth.<sup>21</sup>

**C. Antibiotics:** The penicillins and erythromycin appear to be safe.<sup>9</sup> There are no reports of complications with cephalosporins. The use of metronidazole has been questioned on the basis of carcinogenic and mutational changes in rats and mice. Its teratogenicity has not been shown and a study of 2,500 pregnant women revealed no increase of congenital anomalies.<sup>2</sup> Tetracyclines are contraindicated as they deposit in the skeleton and teeth of the developing fetus and result in interference with bone growth and discolouration of the dentition. Streptomycin and the aminoglycosides are

toxic to the fetal ear, causing eighth cranial nerve damage. Gentamicin and tobramycin are indicated only in severe infections, such as maternal bacterial endocarditis, where the benefit outweighs the risk.<sup>8</sup>

**D. Anti-emetics:** Promethazine and dimenhydrinate are relatively safe.<sup>7,9,15</sup>

**E. Sedatives:** Benzodiazepines and barbiturates have a very low risk as teratogens. Although earlier studies found a correlation between diazepam and cleft palate, they are not supported by subsequent studies.<sup>7,11</sup> Diazepam has been shown to accumulate in the tissues of the fetus, which may result in effects lasting for several days.<sup>6,15</sup>

**F. Corticosteroids:** Since they have been shown to produce cleft palate, inhibit brain growth and induce adrenal hypoplasia,<sup>11</sup> the use of corticosteroids is indicated only for the treatment of severe systemic maternal illnesses, e.g., rheumatoid arthritis.

In conclusion, care of the pregnant patient demands that the practitioner be cognizant of both maternal and fetal needs. Major concerns for the mother during early pregnancy mainly revolve around morning sickness and hyperemesis gravidum and the potential for aspiration. In the third trimester the problems of a physically large fetus present with generalized and specific discomfort, as well as possible supine hypotensive syndrome. Toxemia of pregnancy is a real concern. The clinician must bear in mind that labour may be induced by stress. Concern for the developing child prevails throughout the pregnancy. First trimester insult may result in spontaneous abortion. Malformations are of major concern during the second trimester; in the third trimester, development is primarily affected.

The recommended timing is simply stated in the literature. Emergencies must, by definition, be treated immediately. Elective, non-stress producing procedures are best performed during the second trimester, at a time during which the mother is most stable. Elective procedures requiring general anesthesia are best left until the postpartum period.<sup>5,22,23</sup>

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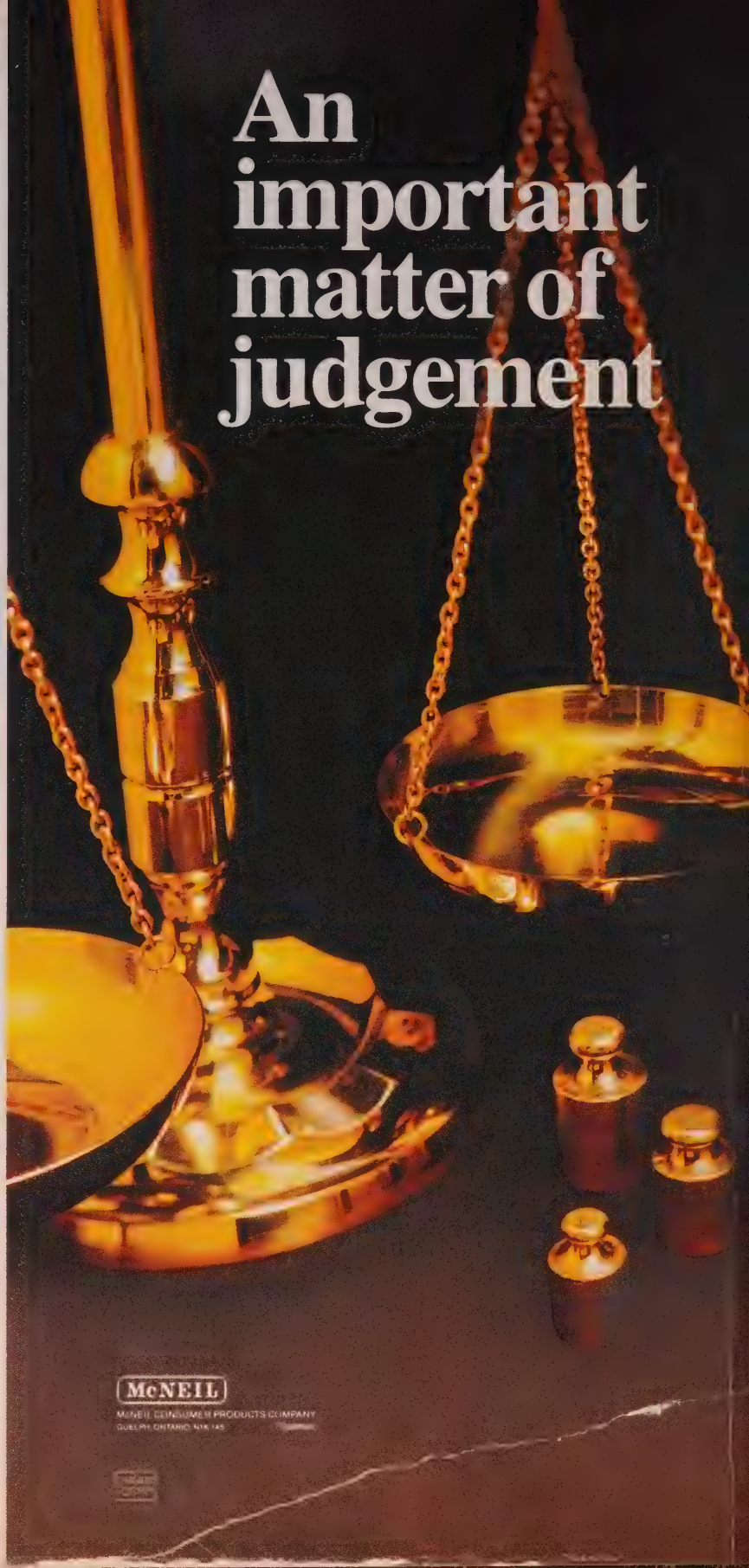
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JTE-01

# An important matter of judgement



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# Weigh the evidence<sup>(1-13)</sup>

There are few, if any, therapeutic decisions made more frequently than those involving so-called simple analgesic/antipyretic drugs. There are

two basic choices. The decision can have far-reaching implications for many patients and also determine the efficacy of concomitant therapy.

| ACETAMINOPHEN                                                                                                   |                               | ASA                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AT LABEL DOSAGE</b>                                                                                          |                               |                                                                                                                                                                                                                                                          |
| <b>EFFICACY</b>                                                                                                 |                               |                                                                                                                                                                                                                                                          |
| equipotent                                                                                                      | <b>ANALGESIC</b>              | equipotent                                                                                                                                                                                                                                               |
| equipotent                                                                                                      | <b>ANTIPYRETIC</b>            | equipotent                                                                                                                                                                                                                                               |
| not indicated                                                                                                   | <b>ANTI-INFLAMMATORY</b>      | required dosage generally exceeds analgesic/antipyretic levels and regular administration is necessary — lesser or intermittent dosage is ineffective                                                                                                    |
| <b>SAFETY</b>                                                                                                   |                               |                                                                                                                                                                                                                                                          |
| hypersensitivity in rare instances                                                                              | <b>ADVERSE EFFECTS</b>        | GI bleeding, ulceration, nausea, vomiting, diarrhea, vertigo, tinnitus, hearing loss, pruritus, urticaria, angio-edema, anaphylaxis                                                                                                                      |
| slight increase in prothrombin time for patients on oral anti-coagulants but generally clinically insignificant | <b>PRECAUTIONS</b>            | history of GI ulcerations, bleeding tendencies, anemia or hypoprothrombinemia; patients with asthma or other allergic conditions; concomitant use with anticoagulants, uricosurics, other non-narcotic analgesics, hypoglycemics, alcohol, methotrexate. |
| none, except rare hypersensitivity                                                                              | <b>CONTRAINDICATIONS</b>      | salicylate sensitivity, active peptic ulcer                                                                                                                                                                                                              |
| no known risk                                                                                                   | <b>IN PREGNANCY</b>           | risk of anemia, hemorrhage, delayed or prolonged labour, increased risk of intracranial hemorrhage in premature infants, premature closure of the ductus arteriosus                                                                                      |
| no specific risk                                                                                                | <b>IN CHILDREN</b>            | specific risk of intoxication using therapeutic dosage in febrile and dehydrated children                                                                                                                                                                |
| rare equivocal reports of reversible liver function abnormality at high dosage                                  | <b>HEPATIC TOXICITY</b>       | reversible hepatitis in apparent risk groups at high dosage                                                                                                                                                                                              |
| equivocal                                                                                                       | <b>ANALGESIC NEPHROPATHY</b>  | equivocal                                                                                                                                                                                                                                                |
| oral anticoagulants (as above) chloramphenicol (increased half life)                                            | <b>DRUG-DRUG INTERACTIONS</b> | oral anticoagulants, uricosurics, non-steroidal anti-inflammatory agents, oral hypoglycemics, corticosteroids, ethyl alcohol, methotrexate                                                                                                               |
| <b>ACUTE OVERDOSE</b>                                                                                           |                               |                                                                                                                                                                                                                                                          |
| potentially serious                                                                                             | <b>CLINICAL RISK</b>          | potentially serious                                                                                                                                                                                                                                      |
| supportive management and/or specific antidote (N-acetylcysteine)                                               | <b>TREATMENT</b>              | supportive management — no specific antidote                                                                                                                                                                                                             |

References listed in brief prescribing information

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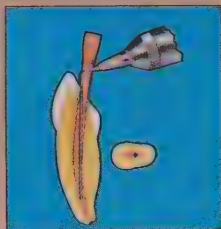
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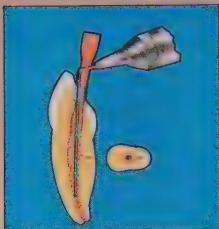


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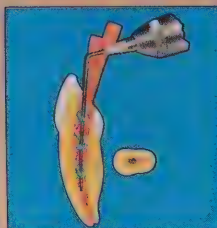
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D E N T S P L Y

# CHRONIC NASOLABIAL CYST

D.S. Precious, DDS, MSc, FRCD(C)  
Halifax, N.S.

## SUMMARY

Pain and swelling at the alar base of the nose, nasal obstruction and the absence of positive radiographic findings should alert the clinician to the presence of nasolabial cyst. A typical case is presented in which the clinical and histopathological features of the cyst are discussed. Treatment is surgical excision.

## SOMMAIRE

Lorsqu'un clinicien remarque une douleur et une enflure à la base alaire du nez ainsi qu'une obstruction nasale, mais que les radiographies ne révèlent rien, il doit se demander s'il n'y a pas un kyste naso-labial. Cet article présente un cas typique tout en discutant les caractéristiques cliniques et histopathologiques de ce kyste. On traite celui-ci par excision chirurgicale.

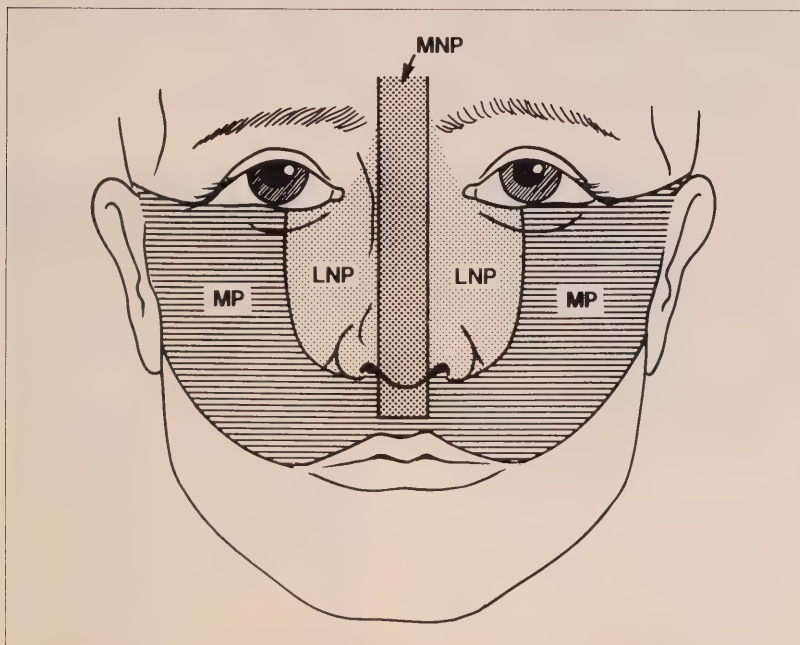


Fig. 1. Schematic representation of the "Facial processes. MP (maxillary process), LNP (lateral nasal process), MNP (medial nasal process).

The nasolabial cyst is an uncommon, soft tissue, non-odontogenic cyst which is usually, for convenience, classified with fissural cysts,<sup>1</sup> all of which are intraosseous (except nasolabial cysts) and develop from epithelium covering the developing embryonal facial processes. It should be noted that the notion of "facial processes",<sup>2</sup> while suitable for this discussion, is an over-simplification, as was pointed out in 1962 by Hamilton, Boyd and Mossman.<sup>3</sup> The nasolabial cyst is thought to arise from epithelium at the point of fusion of the embryonal maxillary, lateral nasal and median nasal processes, hence the location of the cyst in the soft tissues beneath the alae of the nose (Fig. 1). Delaire<sup>4</sup> states that the nasolabial cyst arises from the anterior-inferior prolongation of the nasolabial duct.

This brief paper presents a case in which a nasolabial cyst, by eluding diagnosis and treatment, caused the patient intermittent pain and discomfort for three years.

## Report of Case

A 67-year-old man presented to the emergency clinic in severe pain localized in the right maxilla, particularly in the region of the right alar base of the nose. He stated that these "attacks" had been relatively frequent over the past three years, but in spite of visits to many doctors, several of whom had taken X-rays, he had not been able to find permanent relief. The patient was unkempt, admitted to excessive intake of alcohol and cigarette smoking and was generally gruff and somewhat impolite.

Clinical examination revealed a rather obese 67-year-old man with mild-to-



moderate chronic obstructive pulmonary disease. Intra-oral examination of the hard and soft tissues was unremarkable except that he was edentulous in both the maxilla and mandible. An area of exquisite tenderness was found in the labial sulcus above the canine eminence. No particular swelling could be palpated but, because of the pain which examination produced, firm palpation was impossible. Although dentures had been constructed for the patient, he refused to wear them because the maxillary denture produced pain during function. The orthopantomographic survey revealed no additional information.

At the end of the clinical examination, the skin at the alar base of the nose was inspected very carefully and a tiny opening in the skin crease was noted, which when squeezed produced a minute drop of purulent exudate. The patient proved to be too uncooperative to allow probing of the opening with a lacrimal probe. A provisional diagnosis of secondary infected nasolabial cyst with cutaneous fistulation was made and the patient was programmed for surgical exploration.

Under general anesthesia, the fistula was confirmed by direct examination and probing (Fig. 2), after which, through an intra-oral approach, the cyst was identified (Fig. 3) and enucleated with ease. Confirmation of the cutaneous communication with the cyst is shown in Figure 4.

Histopathological examination of the specimen revealed a cyst with a lumen lined by pseudostratified columnar epithelium. Goblet cells were present, ciliated cells were rare. There was hyalinization of the subepithelial parts and in some areas there was severe acute and chronic inflammation which destroyed the demarcation of connec-

tive tissue from epithelium.<sup>2</sup> The diagnosis was nasolabial cyst with secondary acute and chronic infection.

The patient made an uneventful recovery and resumed wearing his dentures three weeks after surgery. He has been symptom free for three years.

## Discussion

A wide variety of terms have been used to describe this cyst, including, among others, glandular retention cyst, seromucous cyst, congenital fibroepithelial cyst, nasoalveolar cyst and nasolabial cyst.<sup>5</sup>

The cyst occurs more frequently in females than in males by a ratio greater than 3:1 and in this sense our patient is atypical. Nasolabial cysts have been reported in patients whose ages range from childhood to the eighth decade, but the mean age is just over 40 years.

Although frequently accompanied by signs and symptoms of pain, swelling and nasal obstruction, many patients experience no symptoms — in which case the cysts have been discovered by accident. Unilateral lesions are very much more common than those which are bilateral.

Our patient experienced difficulties for three years before diagnosis and treatment, which seems in keeping with other reports in the literature.<sup>5-7</sup> This long duration of persistence of signs and symptoms evidently stems either from reluctance of the patient to seek treatment or to the inability of the clinician to make the diagnosis. The absence of radiographic findings, while certainly contributing to the elusive nature of the cyst, in itself should serve as an important clue to encourage the inclusion of the nasolabial cyst in the differential diagnosis. The treatment is surgical excision of the cyst.

## Conclusions

The nasolabial cyst is a rare lesion which probably develops from remnants of epithelium which once covered the embryonic facial processes, particularly the maxillary lateral nasal and medial nasal processes.

Pain, swelling and nasal obstruction in the absence of positive radiographic findings should immediately alert the clinician to the possibility of nasolabial cyst. It is more common in females than in males and is usually discovered in patients during the fourth decade. If the clinician retains a high index of suspicion, early diagnosis and treatment of a nasolabial cyst will be possible, which in turn will reduce the duration and intensity of suffering for our patients.

Dr. Precious is a staff member of the Faculty of Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5.

Reprint requests to Dr. Precious.

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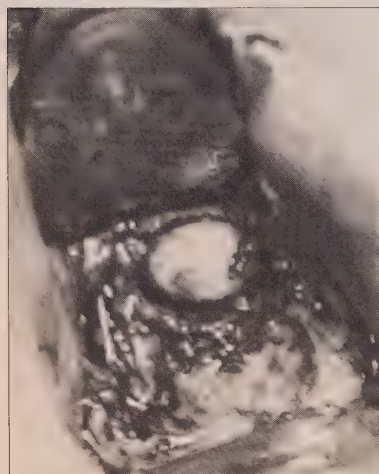


Fig. 2. Lacrymal probe pointing to cutaneous fistula.



Fig. 3. Nasolabial cyst in situ.

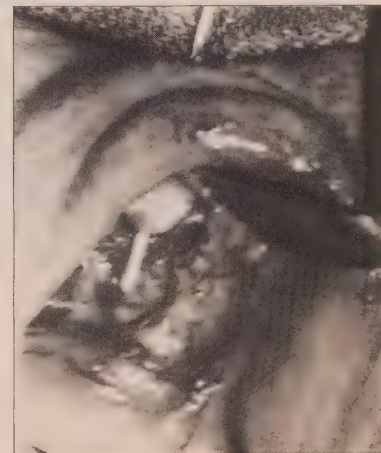


Fig. 4. Lacrymal probe demonstrating communication from cutaneous surface to nasolabial cyst.

# L'IMMUNO- FLUORESCENCE

## COMME AIDE DIAGNOSTIQUE EN MÉDECINE BUCCALÉ

(2<sup>e</sup> partie)

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*La première partie de cet article était publiée au numéro de mars, JADC, Vol. 53, N° 3, 1987, pgs 217-219.*

*Part One of this paper was published in the March, 1987, edition of this Journal, JCDA, No. 3, Pages 217-219.*

### RÉSUMÉ

*Plusieurs muco-dermatoses se manifestent initialement au niveau de la cavité buccale. Les premiers changements qui s'observent alors se traduisent par l'apparition de lésions vésiculo-bulleuses ou desquamatives des muqueuses. Lorsqu'un diagnostic définitif ne peut être corroborer à partir des données cliniques et histopathologiques, l'immunofluorescence s'avère la procédure diagnostique de choix. Les changements pathognomoniques qui s'observent à l'immunofluorescence aux zones de clivage intra ou subépithéliales dans le cas du pemphigus, pemphigoïde bénin des muqueuses, pemphigoïde bulleux et lupus érythémateux ainsi que les changements qui sont suggestifs du lichen plan rendent cette technique d'analyse fort utile en médecine buccale pour confirmer ou informer la présence d'une de ces conditions.*

### Introduction

Plusieurs conditions peuvent être responsables de l'apparition de lésions vésiculo-bulleuses ou desquamatives des muqueuses de la cavité buccale.<sup>1-4</sup> Quoique les différentes caractéristiques cliniques et histopathologiques de ces conditions ont été

abondamment décrites dans la littérature, la problématique associée au diagnostic de ces lésions continue de susciter beaucoup d'intérêt.<sup>5-18</sup> Dans certains cas, établir un diagnostic définitif n'est possible que si le cheminement diagnostique permet d'avoir recours à des tests dont la sensibilité et la spécificité permettent de confirmer la présence d'une seule condition.

Depuis quelques années, la démonstration par immunofluorescence de la déposition d'immunoglobulines et de fractions de complément dans les tissus s'avère une aide diagnostique importante lorsque l'examen histopathologique conventionnel des lésions vésiculo-bulleuses et desquamatives des membranes muqueuses n'est pas assez spécifique pour permettre de poser un diagnostic final.<sup>19-21</sup>

Cette deuxième partie vise essentiellement à présenter une revue des changements immunopathologiques associés aux muco-dermatoses ou collagénoses qui représentent un intérêt particulier pour le dentiste. Les observations notées à partir des analyses à l'immunofluorescence directe et indirecte sont présentées et discutées pour le pemphigus, le pemphigoïde bulleux, le pemphigoïde bénin des muqueuses, le lichen plan, la dermatite herpétiforme, l'érythème multiforme et le lupus érythémateux.

### Pemphigus vulgaris

L'immunofluorescence est utilisée presque de routine en dermatologie pour confirmer le diagnostic de ce désordre. Beutner et Jordon<sup>22</sup> furent les premiers à

démontrer la présence d'anticorps anti-desmosomaux dans le sérum des patients atteints de pemphigus vulgaris. Certaines controverses semblent toutefois exister concernant la présence de ces mêmes anticorps chez les patients présentant des lésions uniquement confinées à la cavité buccale. Ces controverses pourraient dans certains cas s'expliquer par le fait que le pourcentage de détection des anticorps sériques varie considérablement selon la nature du substrat tissulaire employé pour réaliser l'analyse.<sup>23,24</sup> Chez un groupe de patients présentant des lésions confinées aux muqueuses de la cavité buccale, Laskaris a observé une séropositivité pour les anticorps anti-desmosomaux chez 82 pour cent des sujets lorsqu'un substrat tissulaire humain avait été utilisé alors que seulement 48 pour cent des sujets demeuraient séropositifs si on avait recours à l'emploi d'un substrat tissulaire animal.<sup>23</sup>

Concernant les données de l'immunofluorescence directe, elles sont pathognomoniques dans le cas du pemphigus vulgaris. Elles laissent voir une déposition d'immunoglobulines au niveau de la substance inter-cellulaire de l'épithélium ou de l'épiderme des revêtements muqueux et cutanés qui sont affectés. La déposition d'IgG s'observe dans presque la totalité des cas alors que pour les autres immunoglobulines du type IgM et IgA, leur déposition s'observe moins fréquemment.<sup>20,23,25,26</sup> Quant à la fraction C3 du complément, elle est détectée de façon variable dans 40 à 90 pour cent des cas.<sup>23,25</sup> Il est à noter que les anticorps anti-desmosomaux peuvent aussi bien être identifiés au niveau de tissus

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d'apparence saine ou en périphérie de lésions fraîchement développées.

## **Pemphigoïde bénin des muqueuses et pemphigoïde bulleux**

L'examen immunopathologique ne permet pas, à lui seul, de différencier ces deux conditions.<sup>20,24,27,28</sup> Le pemphigoïde bulleux intéresse davantage les revêtements cutanés alors que le pemphigoïde bénin des muqueuses présente une affinité presque exclusivement limitée aux membranes muqueuses. Dans les deux cas, l'immunofluorescence directe permet la détection de dépôt fluorescent linéaire le long de la membrane basale. Cette positivité résulte de la déposition d'immunoglobuline, principalement de type IgG, de la fraction C3 du complément et de fibrine soit à la jonction épithélium-lamina propria dans le cas des lésions des muqueuses ou à la jonction derme-épiderme dans le cas des lésions cutanées.<sup>20,26,27,29,30</sup> De tels résultats s'observent chez 85 à 96 pour cent des sujets atteints d'une de ces conditions lorsque l'immunofluorescence directe est réalisée à partir d'un spécimen provenant des muqueuses buccales.<sup>24,25,29,30-32</sup> À l'opposé du pemphigus vulgaris, aucune déposition d'anticorps n'est observée au niveau de la substance inter-cellulaire de l'épithélium.

Certaines différences semblent exister entre le pemphigoïde bulleux et le pemphigoïde bénin lorsque les données de l'immunofluorescence indirecte sont comparées. Une séropositivité s'observe chez plus de 80 pour cent des sujets atteints du pemphigoïde bulleux et tout laisse croire qu'il existe une bonne corrélation entre le titrage des anticorps dirigés contre la membrane basale et la sévérité de la maladie.<sup>20,26-28</sup> Toutefois, contrairement à ce qui semble être le cas dans le pemphigus vulgaris, ce titrage ne peut servir à prédire le cours évolutif de la maladie.<sup>20,28,32</sup> Du côté du pemphigoïde bénin des muqueuses, très peu de sujets semblent être séropositifs pour la présence d'anticorps dirigés contre la membrane basale. Laskaris a toutefois démontré qu'une séropositivité s'observait plus fréquemment lorsqu'un substrat tissulaire humain de la muqueuse buccale était employé à la place d'un substrat tissulaire provenant du revêtement cutané.<sup>24</sup> Cette observation suggère dans le cas du pemphigoïde bénin que les anticorps circulant pourraient être spécifiques à l'espèce humaine et dirigés principalement contre des substances antigéniques rencontrées au niveau d'organes cibles telles les membranes muqueuses.<sup>24</sup>

## **Lichen plan**

Les études portant sur l'immunopatho-

logie des lésions des muqueuses observées dans le lichen plan sont peu nombreuses.<sup>32-36</sup> Il semble toutefois que les changements observés au niveau des muqueuses s'apparentent à ceux qui caractérisent les lésions cutanées.<sup>20,26,28,32,35,37,38</sup> L'immunofluorescence directe laisse voir une déposition linéaire de fibrine à la jonction de la membrane basale et du chorion dans plus de 90 pour cent des cas.<sup>32-34</sup> On observe de plus, chez 14 à 40 pour cent des sujets, la présence de globules fluorescents dispersés à proximité de la membrane basale au niveau des projections papillaires du chorion.<sup>32,34,36</sup> Ces globules fluorescents correspondent aux corps citoides ou aux corps de Civatte observés à la microscopie conventionnelle. Parmi les protéines responsables de cette immuno-réaction, la fibrine est de loin celle qui est identifiée le plus fréquemment tant au niveau de la membrane basale que dans les globules fluorescents. Jusqu'à maintenant cette déposition caractéristique du fibrinogène notée dans les spécimens de biopsie en provenance de la cavité buccale n'a été observée que dans le cas du lichen plan et du lupus érythémateux.<sup>32,34</sup> Dans ce dernier cas, cette déposition linéaire se caractérise aussi par la présence de la fraction C3 du complément et d'une ou plusieurs immunoglobulines chez plus de 90 pour cent des sujets.<sup>35</sup>

Dans le cas du lichen plan, le recours à l'immunofluorescence indirecte ne permet d'observer aucune séropositivité pour la présence d'anticorps circulant. Ceux-ci ne semblent d'ailleurs jouer aucun rôle de premier plan dans le développement des lésions.<sup>32,37,39,40</sup> Cette analyse n'apparaît être d'aucun intérêt particulier sinon celui de permettre d'exclure la présence de d'autres désordres dont la présentation clinique aurait pu s'apparenter au lichen plan.

## **Lupus érythémateux**

Plusieurs études ont déjà souligné la valeur diagnostique de l'immunofluorescence dans le cas du lupus érythémateux.<sup>20,21,26,32,35,36</sup> Lorsque les lésions sont confinées aux muqueuses de la cavité buccale, les résultats de l'immunofluorescence directe doivent être analysés avec prudence étant donné la similitude des changements observés entre le lupus érythémateux et le lichen plan.<sup>34,35</sup> Tout comme dans le cas du lichen plan, une déposition en bande continue étroite et homogène ou d'apparence granuleuse s'observe à la jonction de la membrane basale et du chorion.<sup>20,32,34,35</sup> Cette bande fluorescente s'associe à la déposition de la fraction C3 du complément jumelée à une ou plusieurs immunoglobulines de type IgM, IgG ou IgA dans

91 pour cent des cas.<sup>35</sup> De son côté, la déposition de fibrine s'observe chez plus de 85 pour cent des sujets.<sup>35</sup>

Du côté de l'immunofluorescence indirecte, l'analyse sérologique intéresse particulièrement la détection des anticorps antinucléaires (AAN). Ils sont généralement présents chez 90 à 100 pour cent des patients atteints de lupus érythémateux systémique comparativement à une fréquence variant selon les études entre 14 et 40 pour cent chez les patients atteints de la forme discoïde.<sup>20,26,41</sup> Cette séropositivité des AAN n'est cependant pas considérée pathognomonique de ce désordre étant donné que ces mêmes anticorps s'observent dans d'autres maladies de nature auto-immunitaire et dans certaines collagénoses.<sup>42</sup> L'importance relative de la détection des AAN réside dans leur titrage et l'évaluation d'un certain nombre de paramètres, dont l'âge du patient et la présence jumelée d'anticorps anti-ADN qui sont particulièrement spécifiques au lupus érythémateux et qui s'observent chez environ 60 pour cent des patients atteints par cette maladie.<sup>20,26</sup>

## **Autres dermatoses**

Parmi les autres dermatoses, l'érythème multiforme représente sans doute un intérêt particulier de par la nature des changements cliniques qui intéressent les membranes muqueuses. Contrairement aux muco-dermatoses citées précédemment les données que procure l'immunofluorescence pour cette condition sont non spécifiques et ne possèdent en soi aucune valeur diagnostique.<sup>34</sup> Au niveau du revêtement épithélial, aucune déposition d'immunoglobuline, de fraction de complément ou de fibrinogène n'est observée. À l'occasion, on note la présence de globules fluorescents ou une faible fluorescence d'apparence granuleuse au niveau de la membrane basale.<sup>34</sup> Ces changements demeurent toutefois non spécifiques et sont facilement différenciés de ceux observés dans le cas du lichen plan et du lupus érythémateux.

La dermatite herpétiforme est une dermatose chronique dont la fréquence des manifestations buccales varie considérablement.<sup>43-46</sup> L'atteinte des muqueuses peut se traduire par l'apparition de lésions érythémateuses, pseudo-vésiculeuses, pruritiques ou érosives. En dermatologie les études à l'immunofluorescence directe se caractérisent presque exclusivement par une déposition d'IgA et de la fraction C<sub>3</sub> du complément. Cette déposition est principalement d'apparence granuleuse et se remarque au niveau des projections papillaires du derme et plus rarement au niveau de la membrane basale.<sup>20,43,45,46</sup> Du côté des muqueuses de la cavité buccale, des

changements similaires ont été remarqués même chez des patients ne présentant aucune manifestation clinique apparente au niveau du revêtement muqueux.<sup>43,46</sup> Du côté de l'immunofluorescence indirecte aucune séropositivité d'anticorps circulant n'a pu être identifiée comme étant pathognomonique de cette condition.<sup>20</sup>

## Discussion

Plusieurs muco-dermatoses peuvent se manifester initialement au niveau des muqueuses buccales et ce, plusieurs mois avant même que des lésions cutanées n'aient fait leur apparition. Chez environ la moitié des patients atteints de pemphigus vulgaris, la cavité buccale peut être le premier site des lésions.<sup>5,7,47-51</sup> Le pemphigoïde bénin des muqueuses se rencontre presque exclusivement au niveau des revêtements muqueux et on reconnaît depuis longtemps son affinité pour les muqueuses buccales.<sup>8,52-55</sup> Généralement, le pemphigoïde bulleux se manifeste sur la peau. Toutefois, chez 11 à 45 pour cent des sujets des lésions endo-buccales accompagneront les premières manifestations de la maladie.<sup>56,60</sup> Cinquante-cinq à quatre-vingt pour cent des patients qui consultent en médecine buccale pour des lésions associées au lichen plan ne présentent initialement aucune lésion du revêtement cutané.<sup>16,17</sup> Parmi les patients chez qui on observe des lésions buccales associées au lupus érythémateux discoïdes, près de 50 pour cent peuvent avoir des manifestations initiales endo-buccales.<sup>10,60</sup> Ce phénomène s'observe aussi dans le cas de l'érythème multi-forme.<sup>12,13,61</sup>

Toutes ces conditions peuvent potentiellement se manifester initialement par l'apparition de lésions bulleuses qui du point de vue clinique vont s'apparenter. Dans certains cas, le diagnostic final pourra être suggéré par une analyse systématique des signes et symptômes et par l'évolution de la maladie. Il est important que le diagnostic final soit cependant confirmé de façon définitive étant donné l'évolution et le pronostic variables que peuvent avoir ces différentes muco-dermatoses. À ce sujet, il n'y a aucun doute que parmi les aides diagnostiques de nos jours disponibles, l'immunofluorescence est la technique qui offre présentement le plus de spécificité et de sensibilité.

Les lésions bulleuses associées au pemphigus vulgaris, pemphigoïde bénin des muqueuses, pemphigoïde bulleux et lichen plan bulleux sont le résultat d'une cascade d'événements qui amène un clivage intra ou sub-épithélial. Toutes ces conditions sont donc susceptibles de présenter un signe de Nikolsky positif qui se traduit soit par la formation d'une bulle ou la desquamation de

l'épithélium sous l'action d'une friction de la muqueuse à l'aide d'un abaisse langue ou d'un gauze.<sup>55</sup> Le même phénomène s'observe dans le cas de l'érythème multi-forme, l'épidermolyse bulleuse et la maladie de Ritter.<sup>62</sup> De son côté, le test de Tzanck réalisé à partir d'un frottis cytologique a pour but de détecter la présence de cellules acantholytiques. Initialement, l'acantholyse était considéré comme un phénomène unique au pemphigus vulgaris. Il est maintenant bien établi que ce phénomène s'observe dans d'autres conditions comme la maladie de Darier, la maladie de Hayley-Hayley, les dermatoses acantholytiques transitoires et dans les vésicules d'origine virale.<sup>63,64</sup>

Quant à l'examen histopathologique conventionnel, il présente aussi certaines limites. Il est parfois difficile et même impossible à l'occasion de biopsier une lésion fraîchement développée. Étant donné que sous l'action des traumatismes chroniques les lésions ulcéreuses vont vite succéder aux lésions bulleuses, les changements observés à la microscopie conventionnelle ne sont souvent que suggestifs d'une condition et ne permettent pas toujours de confirmer le diagnostic final. Dans de tels cas, le recours à l'immunofluorescence directe représente

une alternative de choix permettant de confirmer ou d'infirmer le diagnostic clinique.

À l'examen microscopique, la fluorescence au niveau des espaces inter-cellulaires des cellules épithéliales est pathognomonique du pemphigus alors qu'une déposition linéaire d'immunoglobulines localisée au niveau de la membrane basale séparant l'épithélium du tissu conjonctif s'observe dans les lésions pemphigoides. Quoique cette déposition en bande au niveau de la membrane basale s'observe aussi dans le lichen plan et le lupus érythémateux, le type de réactif employé permet de différencier ces conditions. Le **tableau I** résume les caractéristiques histopathologiques et immunopathologiques associées à chacune de ces maladies. On remarquera que pour le lichen plan, même si les résultats de l'immunofluorescence directe ne sont que suggestifs de cette condition, elle permet néanmoins de recueillir suffisamment d'informations pour justifier l'emploi de ce type d'analyse.

## Conclusion

Il ne fait aucun doute qu'utilisé de façon judicieuse l'immunofluorescence s'avère un aide diagnostic des plus valable en médecine buccale. Ce test permet de suppléer les informations cliniques et histo-

## TABLEAU I

### Résumé des caractéristiques histo-immunopathologiques

| Maladie             | Caract. histo-pathol.                                                                | Immunofluorescence directe                                                                                                                                   | I.F. indirecte                                                                                                       |
|---------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Pemphigus           | Bulle intra-épithéliale. Membrane basale intacte.                                    | Positif pour déposition d'immuno-globuline au niveau de la substance intercellulaire de l'épiderme ou de l'épithélium.                                       | IgG, IgM, IgA, C <sub>3</sub><br>Séropositivité pour anticorps anti-desmosomaux.                                     |
| Pemphigoïde bénin   | Bulle sous-épithéliale entre la membrane basale et lamina propria.                   | Positif pour déposition linéaire d'immunoglobuline le long de la membrane basale.                                                                            | IgG, C <sub>3</sub><br>Fibrine<br>Séropositivité faible ou absente pour anticorps anti-membrane basale.              |
| Pemphigoïde bulleux | Bulle sous-épithéliale entre la membrane basale et lamina propria.                   | Positif pour disposition linéaire d'immunoglobuline le long de la membrane basale.                                                                           | IgG, C <sub>3</sub><br>Fibrine<br>Séropositivité chez 80 pour cent des patients pour anticorps anti-membrane basale. |
| Lichen plan         | Forme bulleuse: Bulle sous-épithéliale superficielle au niveau de la lamina propria. | Déposition linéaire de fibrine le long de la membrane basale avec présence de globules fluorescents situés superficiellement au niveau de la lamina propria. | Fibrine<br>C <sub>3</sub><br>Négatif                                                                                 |
| Lupus érythémateux  | Dégénération et liquéfaction de la membrane basale.                                  | Positif pour déposition en bande le long de la membrane basale.                                                                                              | C <sub>3</sub><br>Fibrine<br>IgM, IgG, IgA<br>Séropositivité pour anti-corps anti-nucléaire.                         |



pathologiques de base initialement recueillis. Le recours à la biopsie pour confirmer la présence d'une muco-dermatose devrait inciter le clinicien à prélever deux spécimens pour qu'une analyse histopathologique conventionnelle et immuno-pathologique soit réalisée. Dans la majorité des cas, l'analyse de ces résultats combinés à ceux de l'examen clinique, pourra procurer suffisamment d'informations pour permettre de poser un diagnostic final.

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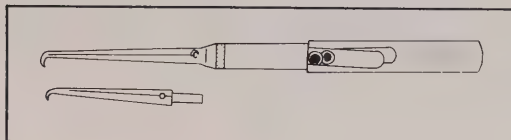
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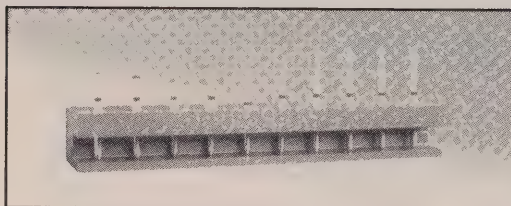
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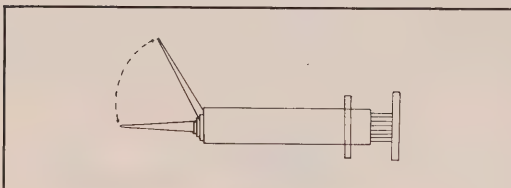
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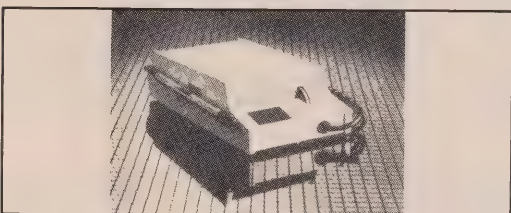
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# Announcements

## APRIL/AVRIL

**April: Sun Seminars**, Hollywood, Florida, presented each weekday throughout April. Contact: Dental Updates, 153 East Palmetto Park Road, Suite 174, Boca Raton, Florida, 33432. Telephone: 305-392-9966.

**April: Sun Seminars**, Nassau, Bahamas, presented each weekday throughout April. Contact: Dental Updates, 153 East Palmetto Park Road, Suite 174, Boca Raton, Florida, 33432. Telephone: 305-392-9966.

**April – May: Acupuncture Analgesia hands on course** (and also regular clinical acupuncture training courses) for dentist groups anywhere in Canada. Clinical Specialist trained in leading world centre in medical/dental surgery acupuncture analgesia. Also analgesic services available for Ottawa-Hull region. Contact: Mr. Henry Jayakody F. Ac. F (SL), H-N. Ac. (Japan). Licenced Acupuncture practitioner (USA) LL.B (Osgoode Hall). Ontario Clinical Acupuncture Centre, 877 Shefford Rd., Ottawa. Tel. 613-748-0080.

**April 2-4: 53rd Meeting of the Danish Dental Association – Scandefa '87**, Copenhagen, Denmark. Contact: Dr. Ib. Sewerin, Postbox 143, DK-1004 Copenhagen K, DENMARK.

**April 23-26: California Dental Association's Spring Scientific Session**, Anaheim, California. Contact: California Dental Association, 818 "k" Street Mall, Post Office Box 13749, Sacramento, California, 95853.

**April 25: Ontario Academy of General Dentistry presents New Materials and Recent Advances in Restorative Dentistry, Posterior Composites**, Algonquin College, Ottawa, Canada. Instructors: Drs. Ron Jordan and Mike Suzuki. Enrollment limited to 20 dentists. Contact: Dr. John Miner (613) 235-8544.

**April 25-28: Michigan Dental Association's Annual Session "Dentistry Now – Challenges and Changes"**, Westin Hotel, Detroit, Michigan. Contact: MDA Central Office, 230 North Washington Square, Suite 208, Lansing, MI 48933 or (517) 372-9070.

## MAY/MAI

**May 1: Practice Management Seminar** presented by the Alpha Omega/Mount Royal Dental Society. A One Day Annual Scientific Limited Attendance Course given by Dr. Jean-Noël Lavallée. Contact: Dr. Ronald Fisher, 132 Aldred Place, Montréal, Québec, H3X 3J3 or (514) 876-6917.

**May 4-5: Computers and Communications in the Healthcare Industry**, the Adolphus Hotel, Dallas, Texas. Contact: Carol Every, Frost & Sullivan, Inc. 106 Fulton Street, New York, NY 10038 or 212-222-1080.

**May 7-8: The Maurice and Gabriela Goldschleger School of Dental Medicine of Tel Aviv University present "New Wave Endodontics"**, Tel Aviv University, Israel. Contact: Dr. Hart J. Levin, 2006 Bathurst Street, Toronto, Ontario, Canada, M5P 2W6, Telephone: (416) 781-2751 or contact: Dr. Colin Gorfil, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Ramat Aviv 69978, Israel, Telephone: (03) 420551.

**May 7-9: Journées Dentaires de Nice-Côte d'Azur** presents demonstrations and exhibitions on Periodontics/Endodontics/Implant dentistry/Fixed Prosthetics, Nice, France. Contact: Journées Dentaires, 9 rue de la Liberté, F-06000 Nice.

**May 8: Stuffy Noses, Long Faces and Malocclusion: A Symposium for Otolaryngologists, Orthodontists, Paediatricians and Allergists.** AMA Category 1 credits. Contact: Continuing Education, Faculty of Medicine, University of Toronto, Medical Sciences Building, Toronto, Ontario, M5S 1A8. Telephone (416) 978-2718.

**May 10: Impression Technique Update**, Sheraton Centre of Toronto. Dr. Hal Nemetz (Orange, California) lecturer. Fee: AGD members \$125 (includes lunch), non-members \$200. Contact: Dr. Marotta (416) 735-3310.

**May 10-13: Ontario Dental Association 120th Annual Spring Meeting**, Sheraton Centre Hotel, Toronto. Contact: ODA head-

quarters c/o Diana Thorneycroft, 234 St. George Street, Toronto, Ont. M5R 2P1. 1-800-387-1393.

**May 11: 30th Reunion of the University of Toronto class 5T7.** Contact: James Loucke, 66 Church Street, St. Mary's, Ontario, N0M 2V0. (519) 284-2660.

**May 16-17: International Association for Orthodontics, Western Canada Section annual spring meeting.** Vancouver, B.C. Four Seasons Hotel (tentative). Contact: Dr. Timothy H. Tam, Pediatric Dentistry, 301-745 West Broadway, Vancouver, B.C. V5Z 1J6, 604-872-0444.

**May 17-22: 41st Annual Meeting of the American Academy of Oral Pathology**, Registry Resort, Scottsdale, Arizona. Contact: Dr. Dean K. White, University of Kentucky College of Dentistry, Lexington, KY 40536.

**May 21-24: Congress of the Swiss Dental Association**, Zurich, Switzerland, sponsored by the Swiss Dental Association. Contact: Swiss Dental Association, Hirschengraben 11, 30 Bern, Switzerland.

**May 24-25: International College of Dentists, Canadian Section Dinner, Convocation and Meeting**, Le Château Champlain, 1 Place du Canada, Montréal, Québec. Contact: Dr. W.J. Spence, Registrar, 1 Heath Street West, Toronto, Ontario, M4V 1T2.

**May 24-28: CDA/ODQ Convention**, Montreal, Quebec. Contact: Canadian Dental Association, 1815 Alta Vista Dr. Ottawa, Ont. K1G 3Y6. 613-523-1770.

**May 27-30: Guatemalan Dental Society's 33rd National Odontological Conference**, Guatemala. Canadian participation welcome. Contact: External Affairs, Central American Trade Division, Mr. Reg Harris, (613) 996-5460.

**May 27-30: Royal Belgian Society of Dentistry's 8th Triennial Congress**, Casino-Kursaal, Oostende, Belgium. Main theme: Biological balances in the oro-facial area. Contact: Secretariat of the K.B.V.T./S.R.M.D., Avenue de Jette, 165, B-1090 Brussels – Belgium, or (32) – (0)2/426 03 47.

**May 29-31: Sri Lanka Dental Association's annual scientific sessions,** Colombo, Sri Lanka. Contact: Sri Lanka Dental Association, Scientific Sessions, Professional Centre, 275/5, Baudhaloka Mawatha, Colombo 7, Sri Lanka.

**May 29-31: 87th Annual meeting of the Canadian Lung Association and the scientific meetings of the Canadian Nurses' Respiratory Society and the Physiotherapy Section,** The Queen Elizabeth Hotel, Montréal, Québec. Contact: A. Les McDonald, Director, Health Education & Program Services, Canadian Lung Association, 75 Albert Street, Suite 908, Ottawa, Ontario, K1P 5E7. Tel. (613) 237-1208.

**May 29-31: 17th International Meeting on Dental Implants and Transplants,** Bologna, Italy. Contact: G.I.S.I. c/o Prof. G. Muratori, Via S. Gervasio, 1-40121 Bologna, Italy.

**May 30-June 1: Canadian Academy of Periodontology Annual Meeting,** Québec City. Presentations by Dr. Burton Langer, New York and Dr. Roy Page, University of Washington. Contact: Dr. Serge Roy, École de médecine dentaire, Bureau 5564, Université Laval, Ste. Foy, Québec, G1K 7P4.

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## JUNE/JUIN

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**June 6: Intermediate/Advanced Workshop in Clinical Hypnosis,** sponsored by the San Francisco Academy of Hypnosis, Letterman Army Medical Center, San Francisco. Fee: \$100 CE Credit: 7 Units of Category 1 CME credit. Contact: Jan Brooks, 615-27th Street, San Francisco, CA 94131 or (415) 826-0533.

**June 7-11: 11th Congress, International Association of Dentistry for Children,** Toronto, Ont. Contact: Secretariat, 11th Congress, IADC, Dept. of Pedodontics, Faculty of Dentistry, University of Toronto, 124 Edward St. Toronto, Ont. M5G 1G6.

**June 11-13: Saskatchewan College of Dental Surgeons annual meeting and convention,** North Battleford, Saskatchewan. Contact: Dr. Glenn Acaster, P.O. Box 503, North Battleford, Saskatchewan, S9A 2Y4, 1-306-445-3422.

**June 11-14: 5th International Congress and 22nd annual Session of the Stomatological Society of Greece,** Hilton Hotel, Athens, Greece. Table Clinics and Video projections included in the programme. Con-

tact: Stomatological Society of Greece, 17 Kallirroes Street, Athens, 117 43 Greece.

**June 12-13: Bio-Research TMJ Seminar,** St. Louis, Missouri. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**June 17-21: 62nd Annual Congress of the European orthodontic Society,** Madrid, Spain. Contact: Escuela de Estomatología, Ciudad Universitaria, Madrid, Spain.

**June 18-21: University of British Columbia and the College of Dental Surgeons of B.C. 25 Year Celebration and Convention.** Featured speaker: Dr. P.O. Branemark. Contact: The College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, B.C., V6H 3N4. 604-736-3621.

**June 18-22: Asian Implant Academy's 4th International Meeting on Oral Implantology,** Singapore. Contact: Organising Chairman, 4th I.M.O.I., 268 Orchard Road, 5th Floor, Yen San Building, SINGAPORE, 0923.

**June 19-21: 6th International Symposium on Ceramics,** sponsored by Quintessence Publishing Co. Inc. Los Angeles Airport Hilton and Towers, Los Angeles, California. Contact: Quintessence Publishing Co. Inc. 870 Oak Creek Drive, Lombard, Illinois, 60148-6405 or 800-621-0387.

**June 22-24: International Conference on Oral Biology,** Amsterdam, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111 14th Street NW, Suite 100, Washington, DC 20005.

**June 23-26: 93rd Annual meeting of the American Dental Society of Europe,** Hotel Royal Victoris-Jungfrau, Interlaken, Switzerland. Contact: Clive R. Debenham, 1 Harley Street, London, WIN 1DA, England.

**June 26-28: International Association for Dental Research,** the Hague, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111, 14th Street NW, Suite 100, Washington, DC 20005.

**June 26-July 3: Bermuda Dental Association Convention,** Hamilton, Bermuda. There will be speakers on the topics of Restorative Dentistry, Periodontics and stress management and also an excellent

social program. Families welcome. Contact: Dr. Bob Brandon, 85 Lonsdale Drive, London, Canada, N6G 1T4.

**June 28-July 1: Pacific Dental Conference** sponsored by the Pacific Dental Federation and the Alberta Dental Association, Banff Springs Hotel, Banff, Alberta. Featured speakers: Dr. David Garber and Dr. Marwan Abou-Rass. Contact: Dr. N. Zaharichuk, 401-4600 Crowchild Trail N.W., Calgary, Alberta, Canada, T3A 2L6 (403) 286-2600. C.P. Air — Official convention airline. Contact 1-800-268-4704 for special fares.

**June 30-July 4: 8th Congress of the International Association of Dentistry for the Handicapped,** Bergen, Norway. Contact: Dr. Marit Molland, Hjelms 19, N-5032 Minde, Norway.

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## JULY/JUILLET

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**July 1: Applications are being accepted for the Postdoctoral Program Dental Diagnostic Science** at the University of Texas Health Science Center, at San Antonio, for the class beginning July 1, 1987. Contact: Office of the Associate Dean for Advanced Education, The Dental School, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Dr., San Antonio, Texas, 78284.

**July 3-5: British Dental Association Annual Conference,** Scottish Exhibition and Conference Centre in Glasgow, Scotland. Scientific and Social programmes; speakers include Dr. Richard J. Simonsen, Dr. Michael A. Lennon, Professor Bo Krasse and Professor Jens Pindborg. Special rates for accommodation will be offered. Contact: Helen Mackay, Meeting Planner, 64 Wimpole Street, London, England, W1M 8AL.

**July 4-8: Canadian Paediatric Society and l'Association des Pédiatres de la Langue Française conjoint meeting,** The Queen Elizabeth Hotel, Montréal, Canada. Contact: Secretariat: Canadian Paediatric Society, Children's Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario, K1H 8L1, telephone: (613) 737-2728.

**July 6-8: 1st World Congress on Oral Prevention,** Palais des Congrès, Paris. Topics include tooth disease, dental plaque and prevention of oral diseases. Deadline for registration, April 30. Contact: Dixit International, 73, rue de l'Évangile, 75886 Paris cedex 18, France.



**July 10-11: Bio-Research TMJ Seminar,** Toronto, Canada. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**July 19-24: First International Symposium on Management of Pain, Stress, Fear and Anxiety,** Tel-Aviv. Topics include Biochemical, physiological and psychological correlates of pain, stress, fear and anxiety and Clinical Management. The official language of the symposium is English. Contact: Program Chairman, Prof. Y. Sharav, School of Dental Medicine, Hebrew University of Jerusalem-Hadassah, Jerusalem, Israel. Telephone: 972-2-446146.

## AUGUST/AOÛT

**August 2-8: International Association of Forensic Sciences Triennial Meeting,** Vancouver, B.C. Contact: International Association of Forensic Sciences, 750 Jervis Street, Suite 801, Vancouver, B.C., Canada, V6E 2A9.

**August 21-23: 3rd Annual Symposium of the American College of Oral Implantology,** Kiawah Island Resort, South Carolina. Contact: Margaret M. Jackson, Executive Director, I.C.O.I., P.O. Box 2277, Grand Central Station, New York, New York, 10163. (201) 783-6300.

**August 24-29: Biennial Conference of the New Zealand Dental Association,** Wellington, New Zealand. Contact: Dr. Robert A. Stallworthy, NZDA, P.O. Box 3709, Wellington, New Zealand.

**August 28-29: Bio-Research TMJ Seminar,** Los Angeles, California. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

## SEPTEMBER SEPTEMBRE

**September 18-20: The Northern Ontario Dental Association Convention,** Pinewood Park Motor Inn, North Bay, Ontario. Contact: Dr. Gaetan Fournier (705) 472-5300.

**September 23-26: Dentechnica Nuremberg 87 – 9th International Congress of Dental Technicians with Specialized Exhibition for Dental Laboratories,** Nuremberg Exhibition Centre, Nuremberg, West Germany. Motto: "precision in dental technology is not a matter of chance". Contact: NMA Nürnberger Messe-und, Ausstellungsgesellschaft mbH, Messezentrum, D-8500, Nürnberg 50.

**September 24-25: British Society of Oral Medicine meeting,** in the Royal College of Surgeons of England, London, England. Contact: Dr. David Wray, British Society of Oral Medicine. Dept. of Oral Medicine and Oral Pathology; High School Yards, Edinburgh, Scotland, EH1 1NR.

## OCTOBER/OCTOBRE

**October 10-15: American Dental Association Annual Convention.** Las Vegas, Nevada. Contact: ADA, 211 E. Chicago Ave., Chicago, Ill. USA 60611.

**October 22-25: The 15th Expodental and the 2nd Expotechnodental,** Milan, Italy at the Milan Fair. Contact: Expodental, 20123 Milano, via Tamburini 2, ITALY.

**October 24-30: 85th Annual World Dental Congress of the FDI.** Buenos Aires, Argentina. Contact: Dr. R.H. Lemme, Congresos Internacionales, SA, Moreno 584-9e, Piso (1091) Buenos Aires, Argentina.

**October 29–November 1: Canadian Academy of Endodontics Convention,** Toronto, Ontario. Contact: Dr. Martin Gelfand, 487 Lawrence Avenue West, Toronto, Ontario, M5M 1C6.

## NOVEMBER/NOVEMBRE

**November 5-7: Second District Dental Association of Pennsylvania's Annual Dental conference,** Sheraton-Valley Forge Hotel and Convention Center, King of Prussia, Pennsylvania. Speakers will include Dr. Ronald Goldstein and Dr. R. Sheldon Stein. All day programs, table clinics and special programs. Contact: B.J. Dencler, Conference Coordinator, 1039 Louise Lane, Allentown, Pennsylvania, 18103. 215-820-4062.

**November 27: Practice Management,** Royal York Hotel, Toronto. Chuck Sorenson, lecturer. Fee: AGD members \$125, non members \$200. Contact: Dr. Marotta (416) 735-3310.

## OPPORTUNITIES AVAILABLE

**All dentists** will receive one placement at no charge with every two consecutive advertisements they run in the classified section of the Journal of the Canadian Dental Association in 1987.

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**R**ecommending a therapeutic oral rinse to fight plaque and prevent gingivitis is not the exception. It's the rule. So a complete oral hygiene program should include the use of Listerine Antiseptic.

Clinical studies show that using Listerine Antiseptic twice a day reduces plaque build-up from 20-50% compared to brushing alone.<sup>2,3,4</sup> Studies also confirm that

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So in addition to regular check-ups, brushing and flossing, recommend Listerine Antiseptic to your patients. When it comes to reducing plaque and preventing gingivitis, make Listerine Antiseptic the golden rule.

References: **1.** LAMSTER, I., et al.: Clin. Prev. Dent., 6:12 (1983). **2.** MENAKER, L. et al.: Ala. J. Med. Sci., 16:71 (1979). **3.** ROSS, N.M., et al.: Warner-Lambert research report #955-0875 (1976). **4.** YANKELL, S.L., et al.: Warner-Lambert research report #955-0893 (1976).

Active ingredients: Alcohol 21.9% w/v, Eucalyptol 0.091% w/v, Thymol 0.063% w/v, Menthol 0.42% w/v  
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The incumbent will be responsible for a wide variety of restorative, repair and preventative dental hygiene activities and will supervise a certified intra-oral Dental Assistant.

Preference will be given to individuals with experience in dealing with psychiatric patients. We are prepared to undertake employment contracts. Please submit your specialities in a detailed resume, quoting **competition #87/023 (C26)**, to:



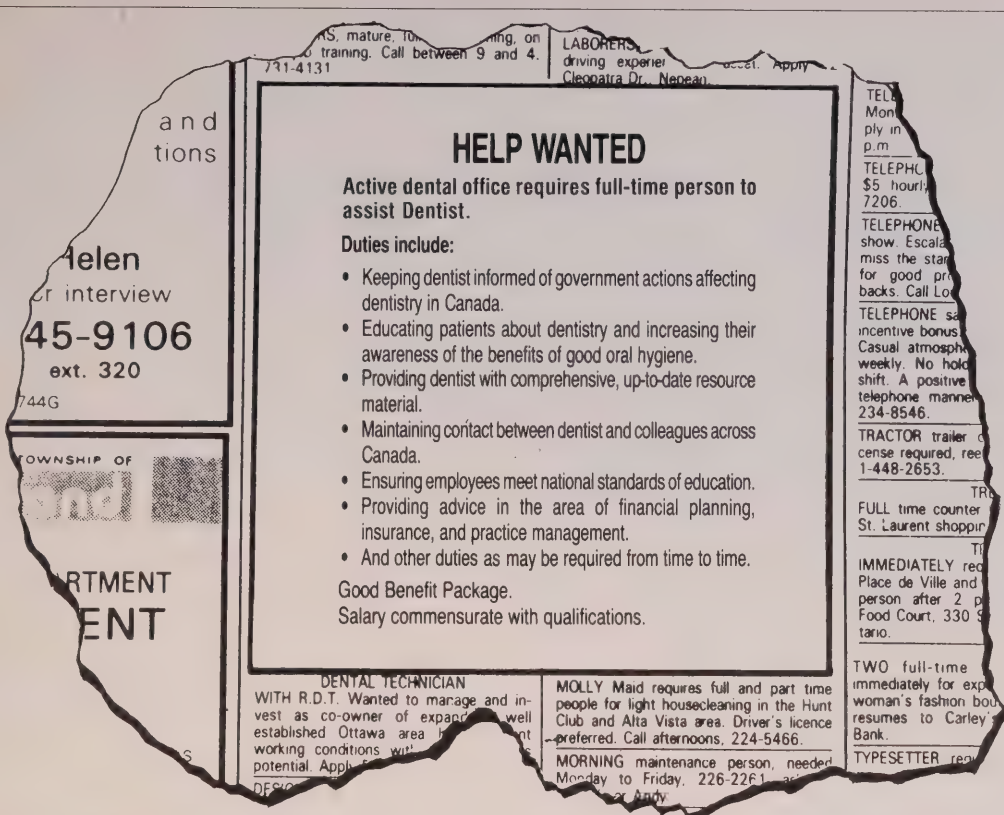
Human Resources Division  
P.O. Box 1000  
Ponoka, Alberta  
T0C 2H0

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## ROYAL CANADIAN DENTAL CORPS. ASSOCIATION

While at the JOURNÉE DENTAIRE and the CANADIAN DENTAL ASSOCIATION CONVENTION in Montreal, you are cordially invited to Attend A DENTAL CORPS RECEPTION to be held in the GRAND SALON of the MERIDIEN HOTEL Montreal, Quebec. MONDAY MAY 25th 1987 from 1600 hours to 1800 hours (4:00 p.m. to 6:00). Wives are welcome!

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# Marketplace

## OFFICES AND PRACTICES

**NORTHWESTERN BRITISH COLUMBIA:** Busy, high volume, ground floor dental practice for sale for one half year's gross. With or without building. Five operators, Dental Eze chairs, Adec delivery, Pan, Ceph, Computer control. Turnkey Operation. Owner retiring. Please reply to CDA Box 2353.

**BRITISH COLUMBIA—Grand Forks:** Purchase busy high gross-net general practice doing all phases of dentistry. Suitable for 1-2 dentists. Will associate 6-12 months for transfer of patients. May purchase modern 2400 sq. ft. dental building or lease with option. Dr. Mark O'Neill, Box 1120, Grand Forks, BC, V0H 1H0 (604) 442-2177.

**BRITISH COLUMBIA—Kelowna:** Opportunity to purchase established, thriving dental practice in professional building. Two fully equipped operatories with room to expand to four. Owner is retiring and willing to assist in transition. Very reasonably priced. Please reply to Dr. Kenneth Geis, #26 1710 Ellis Street, Kelowna, B.C. V1Y 2B5. Telephone days (604) 762-2223, evenings (604) 763-8603.

**BRITISH COLUMBIA—South Vancouver** —900 sq. ft. space available immediately. All improvements, some dental equipment and furniture included at no charge. Tremendous referral from eight busy medical practitioners on same floor. Excellent for recent graduates or relocation. Present two dentists moving to larger premises. Call (604) 261-3366 or 266-9888 evenings.

**BRITISH COLUMBIA—Vancouver:** PEDI-ATRIC PRACTICE For Sale. Excellent opportunity for ambitious pediatric dentist. Well established, busy pediatric practice in non-fluoridated area with active recall system. Diversified practice with large referral base and opportunity for hospital dentistry. Send inquiries to 243-1755 Robson Street, Vancouver, B.C. V6G 1X9.

**BRITISH COLUMBIA—Vancouver:** Rare opportunity to buy very well established 12 year old family practice situated east Vancouver. High income. Excellent transit facilities. Dentist going abroad. Will stay as long as necessary for smooth transfer. Write CDA box 2356.

**BRITISH COLUMBIA—Victoria:** For sale in beautiful residential neighborhood of Victoria. Selling practice and 1/3 share of building. Buy into this very congenial group practice of three dentists and excellent support staff. Painless quality practitioners please call (604) 384-7224.

**BRITISH COLUMBIA—North West Central B.C.:** Successful, well established family practice in beautiful Smithers, B.C. 1400 sq ft, 4 operatories, panelipse, pel-toncrane chairs, many extras. Owner returning to graduate school. Superb skiing, fishing, hunting. One hour by jet to Vancouver. Very reasonably priced. Call Dr. Steve Davis (604) 847-9183 (B) or (604) 846-5544 (H) or write box 1057 Smithers, B.C. V0J 2N0.

**BRITISH COLUMBIA: PEDODONTIC PRACTICE** — 3 operatories available. Pleasant surroundings with excellent view of downtown Vancouver. Replies to Dr. G.M. Jinks, 301-1701 W. Broadway, Vancouver, B.C. V6J 1Y3. Telephone (604) 731-4608 Mon. — Thurs. only.

**ALBERTA—Edmonton:** General practice for sale, central location. Professional building, two fully equipped operatories, third operatory serviced, compact, efficient, owner retiring. Phone (403) 428-7833.

**ALBERTA: SUPERIOR PRACTICE** — An Excellent opportunity to acquire a well established, progressive practice in West Central ALBERTA. Potential is limited only by your capability. Suitable for 1 or 2 Dentists and excellent terms for the appropriate candidate. Owner returning to school Fall '87. Call collect (403) 723-6623. Dr. R. Mazurat.

**ALBERTA: WANTED — TO SELL** — Small town, community dental clinic. Population approx. 2500, sports minded community, clinic located on main street, good patient flow, prevention dentistry oriented. Please reply to (403) 753-6252.

**MANITOBA—Winnipeg:** Progressive modern preventive practice for sale, 2 Cox units, P&C chairman and lights, panelipse, 2 hygienists etc. quality equipment throughout, high gross and climbing, owner will assist during transition. Dr. Brian Friesen (204) 338-7856, Home (204) 661-3053.

**ONTARIO—Kitchener/Waterloo:** Fast growing urban centre *only* 1 hour west of Toronto. TREMENDOUS OPPORTUNITY. Growing family practice for sale. Great location in fast-growing residential neighbourhood. Clientele middle to upper class, highly educated. High proportion of families, most with dental insurance. Excellent exposure on busy street, high traffic count. Store front location with good walk-ins. Excellent long-term lease, very low set rate at \$8 per sq. ft., tied in until 1996. Approximately 1300 sq. ft. ultra modern and spacious office, beautifully decorated. Oak trim throughout, custom cabinet, 3 large skylights. Four operatories plumbed, one fully equipped. Modern facility with nitrous-oxide, stereo headphones, colour T.V. suspended above dental chair & VCR for viewing of movie videos by patients during treatment. Plenty of room for expansion to accommodate this fast growing practice. Excellent growth potential with approx. 400 active patients in the first year, with over 30 new patients per month and high percentage of recalls. Books for the past year show above average gross. Financial statements available to serious purchaser. Owner to specialize. Staff will stay. Owner will remain to assure smooth transition. This practice offers unlimited potential, with great financial rewards. No broker fees. For more information, please contact Sue at (416) 746-3435.

**ONTARIO—Toronto:** Practice for sale. Store-front location in shopping plaza. Prestigious area with high traffic flow and low overhead with good lease. Dentist leaving country. Call 416-221-0851.

**ONTARIO—Windsor area:** Busy progressive, family practice for sale. Enjoy benefits of real estate ownership, low overhead, cost-sharing in modern, attractive facility. Close to the many recreational & cultural facilities of several large centres. Interested party could start as an associate for 1 yr. Please call Dr. David Charters (O) 519-738-2260 (H) 519-776-6277.

**ONTARIO:** Bright, young, well-equipped general practice, reasonably priced for sale. Excellent store front location, fantastic potential, in a high dental insurance area. Very low rent. Please phone (807) 475-4405 (days) or (807) 623-5650 (evenings) for details.

**NOVA SCOTIA—Halifax**—Established downtown general practice for sale, located in central business district. Sale includes share of modern equipment, sundries, and term lease of office space. Practice includes a large recall clientele, (mostly adult). Suitable for an experienced operator or two graduates. Apply to Box CDA 2327.

**NOVA SCOTIA—Hantsport**: Well-established six year old family practice for sale; modern equipment; sundries included. Two operatories, low overhead. Close to Annapolis Valley; less than one hour drive to Halifax. Phone (902) 684-9884.

**NEWFOUNDLAND—St. John's**: Well established, ultra modern practice for sale — St. John's area. Excellent location. High gross and net. Please reply to Box #2355.

**NEWFOUNDLAND**: For sale, busy, well-established practice, two operatories, lab, low overhead. Reasonably priced, owner relocating. Phone (709) 279-3961 after 6 p.m.

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## ASSOCIATESHIP AVAILABLE

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**BRITISH COLUMBIA—Nanaimo**: Associate required for general family practice. Present associate retiring. Excellent opportunity for right person. Phone: Peter E. Farrow (604) 753-1181 (Days Mon. Tue. & Wed.) (604) 592-2553 (Eves.)

**BRITISH COLUMBIA—Surrey**: ASSOCIATE REQUIRED. Exceptional opportunity available to full time associates starting in June. Busy modern family oriented practice situated 25 minutes from Vancouver. Please contact: Dr. Salim Kamani (604) 584-7710, (604) 538-2997.

**BRITISH COLUMBIA**: Associateship Available — Associate required for general practice in Lillooet, B.C. by the Fraser River. Excellent opportunity for full or part time. Reply in writing to Dr. Barry Goldberg, Box 188, Lillooet, B.C. V0K 1V0 or phone Dr. Goldberg or Rita at (604) 256-4616.

**ALBERTA: CALGARY—ASSOCIATE**—Established modern family group practice offers an exceptional opportunity for part-time or full-time associates. Potential future partnership. Please contact: Barb (403) 289-3746.

**ALBERTA—Edmonton—Associate Required**: Busy downtown solo practice requires ambitious dentist (new grad) to

work weekends and some evenings (negotiable). Emergency and family practice located in Mediacentre clinic. Good potential and very relaxed atmosphere. Please contact: Dr. Richard Levin (403) 420-6394.

**ALBERTA—Jasper**: ASSOCIATE WANTED for very busy progressive family practice in Jasper National Park. Excellent opportunity for quality conscious, confident grad, or experienced dentist. Flexible hours to maximize benefits of the area for another outdoor oriented practitioner, starting April, 1987. Contact: Dr. David W. Regehr (403) 852-4824 Home, (403) 852-3112 Office.

**ALBERTA: ASSOCIATE REQUIRED** — Rare Opportunity — Fully equipped, nicely decorated, modern 6 operator practice requires full-time associate. Busy family oriented practice in northern Alberta. Phone Dr. E.M. Zysko 1-403-743-5958 (Bus) or 1-403-791-9380 (Res).

**ALBERTA**: Calgary-Board-eligible Endodontist wanted to join busy Endodontic practice as a full-time associate with opportunity for partnership. Reply to CDA Box 2354.

**ONTARIO—Windsor**: ASSOCIATE-BUY-IN—Progressive, high gross-net practice for sale or short-term associateship leading to purchase. Newly equipped, 1900 sq. ft. facility (Adec., Dental Ease, Fiber Optics). Excellent opportunity for recent graduate to own their own practice. Reply to CDA box 2357.

**ONTARIO—Associate Opportunity** — Ambitious full or part-time associate wanted for a well established, growing, high quality, family preventive practice. Located in a beautiful year round recreational atmosphere of southern Georgian Bay. Fabulous boating, fishing, hunting, golf, and skiing available. Modern, bilingual, open concept four operator quality facility, with full-time hygienist. Progressive, relaxed atmosphere offers unique and excellent opportunity for a young conscientious dynamic, energetic graduate to practice all branches of dentistry with an enthusiastic and talented staff. Hospital privileges are available. Exceptional caring dentist as an associate, with a view to full partnership wanted. Solid professional environment, along with encouraged continuing education will allow you to maximize your potential in dentistry and will provide you with an exciting and rewarding experience. Call Collect: David P. Scanlon. Days — (705) 549-3355. Evenings — (705) 526-5550.

**QUÉBEC—Brossard** (15 minutes from downtown Montreal): Bilingual associate for a ten year old practice located in a major commercial centre. Suburb is rapidly expanding and has a young cosmopolitan population of professional and entrepreneurial class. Telephone (514) 465-9100.

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## OPPORTUNITIES AVAILABLE

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**BRITISH COLUMBIA—ASSOCIATESHIP AVAILABLE & HYGIENIST REQUIRED in Prince George, B.C.** as part of busy well established practice — full patient load immediately. High annual gross. Great outdoor recreation opportunities. Contact: Dr. D. Kjørven, #201 — 1531 8th Ave., Prince George, B.C. V2L 3R3, 604-564-7337 (office), 562-6834 (home).

**BRITISH COLUMBIA—Victoria**: Needed: Dental Hygienist. Full time position. Flexible hours. Young, fun, group practice. Periodontally oriented — Starting April 1987. Contact: Tridont Dental Centre, 152 — 2945 Jacklin Road, Victoria, B.C. V9B 5E3.

**ALBERTA—CALGARY: HYGIENIST**—Position available for part-time or full-time hygienist, to join our general group practice dental team. For further information please contact: Barb (403) 289-3746.

**SASKATCHEWAN**: Practice opportunity for associate dentist to join extended hour Medical & Dental Clinic with 70,000 medical visits per year. Recently opened Dental Clinic growing by 6-10 new patients per day. Apply with resumé to Dr. R. Katz, 357 Albert St., Regina, Saskatchewan, S4R 2N6. (306) 775-2175.

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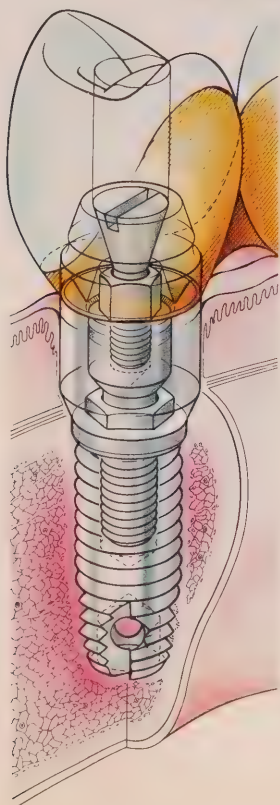


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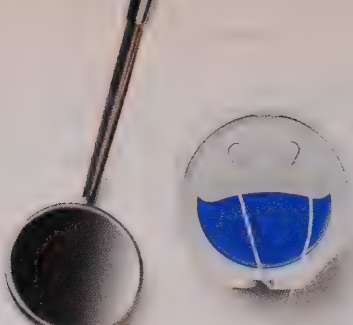
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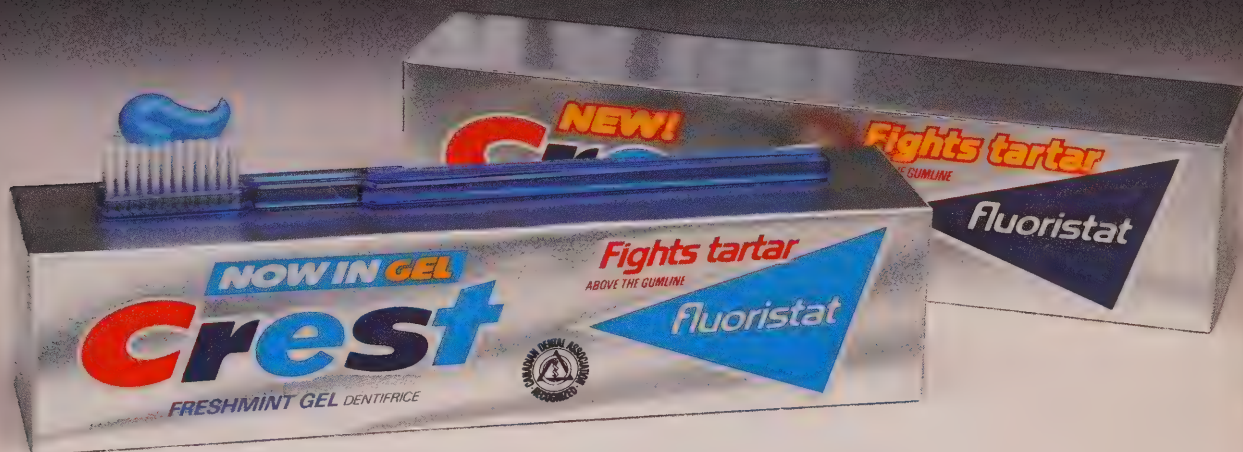
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## TIME TO RECONSIDER THE USE OF ALDEHYDES IN CHILDREN'S DENTISTRY

**T**he formocresol pulpotomy for primary teeth was described by Buckley in 1904 (see review page 401). It remained essentially unchanged until the 1970's when it became apparent that the concentration was much stronger than necessary. Histological studies made it clear that a 1:5 dilution of stock Buckley's Formocresol was less irritating. Other studies demonstrated that the empirical practice of adding formocresol to the zinc oxide-eugenol obturation medium was of no advantage as it diffused out of the tooth within a few days.

The investigations of Myers, Pashley and associates, showed the significance of dosing pulp canals with highly reactive medicaments. They clearly demonstrated that formaldehyde passed from the tooth to the blood vascular system and throughout the body. Some investigators reported local effects on the permanent teeth that developed subjacent to treated primary teeth while others did not. There is even greater cause for concern when one considers the mounting literature outside of dentistry that has incriminated formaldehyde as a sensitizing, toxic and mutagenic agent with a potential for carcinogenesis in humans.

Gluteraldehyde was considered as early as 1972 as an alternative to formocresol.<sup>1</sup> Recently, radioactive labelling has shown that it too escapes the pulp and can be demonstrated in the blood vascular system.<sup>2</sup>

Why use aldehydes at all? Alternative treatments are being investigated in laboratories throughout the world. North American investigators have tried to coagulate pulps with electrosurgery<sup>3</sup> and Japanese researchers are currently re-evaluating calcium hydroxide.<sup>4</sup> Israelis are placing enriched collagen in vital canals to facilitate cellular growth and produce a new "vital" pulp.<sup>5</sup>

There is a more conventional means of eliminating the use of aldehydes from primary pulp therapy — Remove the pulp tissue. Since the time of Buckley, dentists have become proficient in many phases of endodontic therapy. Hedstrom files are available and we know how to use them. Furthermore, a pulpectomy works on both vital and non-vital primary teeth. Since 1981, at The Hospital for Sick Children in Toronto, we have carried out a pilot study using zinc oxide-eugenol (without formocresol) or to a lesser extent, calcium hydroxide as an obturation medium for primary teeth. A study is currently underway in our clinic using altered formulations of similar materials for pulpectomies of vital and non-vital primary teeth. The techniques we have developed in our pilot study are simple alterations of conventional endodontics.

The question is not one of whether formocresol pulpotomies are clinically successful — they have been proven so. Furthermore, there is little evidence that any harm befalls the permanent successor. However, in the light of a mounting literature that shows formaldehyde and gluteraldehyde "leaks" from the tooth and the potential consequences, how can we go on using a technique that is just not necessary? Of all the sophisticated techniques available, the pulpectomy using non-aldehyde obturation medium is ready for use now. It is time to reconsider primary pulp therapy and eliminate such reactive chemicals from our therapeutic regimen.

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# News Update

## UBC CELEBRATES 25 YEARS

The Faculty of Dentistry at the University of British Columbia is 25 years old in 1987.

To celebrate the 25th anniversary of the founding of the UBC dental faculty, a three day scientific and clinical meeting, in conjunction with the annual convention of the College of Dental Surgeons of British Columbia, has been organized. The theme of the program will be "Celebrating Excellence Through Education", and the program will run from June 18-21, 1987.

Four symposia are planned to help celebrate the anniversary. On June 19, Symposium I will be held, entitled "Biocompatible Implants." Featured speakers include Dr. P.I. Branemark, the renowned Swedish implantologist; and Drs. Robert Pilliar (Toronto), Thomas Taylor (Seattle), Donald Brunette and Timothy Gould (UBC).

Symposium II will take place on June 19 from 2:00 pm to 3:30 pm and will be a special presentation by Dr. John B. MacDonald of Toronto entitled "The Current Status of Dental Research in Canada."

Symposium III on "Biological Disease Indicators" will begin at 9:00 am on Saturday, June 20, and will continue until noon the same day. The chairman of this symposium will be Dr. Bo Krasse, of Sweden, who will also present a paper entitled "Microbiological Assessment of Caries." Other speakers at Symposium III will be Drs. Barry McBride, Doug Waterfield and Joseph Tonzetich, all of UBC and Dr. Walter J. Loesche of Michigan.

The fourth Symposium, on "Imaging in Research and Practice" will take place on Sunday, June 21, 1987. Dr. Robert E. Moyers of Michigan is the Chairman, and he will speak on "Mathematical Modelling and Prediction of Growth on Cranio-facial Form." Four other UBC speakers will also be featured: Drs. Virginia Diewert, Alan Lowe, Colin Price, William Wood and Brian Pate.

Abstracts of all of the papers to be presented at the four symposia are published elsewhere in this issue.

In addition to the Symposium, concurrent lectures are also being held. Friday's topics include: "Techniques for Improved Function and Esthetics", by Dr. Craig Naylor; "The Evolving Dental Practice," by Dr. and Mrs. Judd Anderson; "Diagnosis and Treat-

ment of Periodontal Disease", by Drs. Tim Gould and Ellen Stradiotti; "Practical Prosthodontics for Osseointegrated Implant Restorations," by Dr. Thomas Taylor and "Computers in the Dental Office Scene: What to Do and How to Prepare Your Practice," by Mr. Kingsley Butler of CDSPI.

Saturday will feature Dr. Basil Plumb on "Crown and Bridge: Success Over the Long Term", and Dr. Doug Clement, "Lifestyle: Physical Activity and Nutrition," as the morning program. In the afternoon, Dr. Bo Krasse will speak on "Modern Approaches to the Treatment of Dental Caries", while Dr. William MacDonald will explore "Current Trends in Oral and Maxillofacial Surgery." Also featured in the afternoon will be Dr. John Mitchum on "Restorative and Preventive Resins," and Dr. Peter Stevenson-Moore on "The Complete Diagnosis of the Edentulous Mouth."

There will be five speakers on Sunday's program of lectures, beginning with Dr. Robert Priddy on "Oral Pathology in B.C." Dr. Richard Tucker will give "An Overview of Retainers and Castings," while Dr. Robert Moyers will speak on "Childhood Indicators of Adult TMJ Dysfunction." A lecture on "Oral Radiological Interpretation" will be given by Dr. Colin Price and one on "The Use of Posts in Endodontically Treated Teeth" will be given by Dr. Martin Gelfand.

In addition to the lectures, a number of participation clinics are also scheduled. Topics include: "Laboratory Review: Gross Anatomy of Head and Neck"; "Direct Bonded Veneers"; "An Introduction and Update on Nitrous Oxide Sedation"; "The Latest Endodontic Equipment and Techniques"; "A Practical Review of Radiographic Techniques for Assistants and Hygienists"; "Advanced Technology in Oral Biology"; "Preprosthetic Molar Uprighting"; Management of the Infectious Dental Patient"; "Cosmetic Principles of Tooth Arrangement"; "Developing Good Intraoral Photographic Techniques"; and "Chairside Staining of Porcelain".

The social program features a UBC alumni reunion dinner, a salmon barbeque as well as dental exhibitors.

For further information, write to *The Quarter Century Celebration, 1125 West Eighth Avenue, Vancouver, B.C. V6H 3N4* or telephone 604-736-3621.

## DR. BRIAN ROCKY NAMED B.C. COLLEGE REGISTRAR

Dr. Brian N. Rocky, of Richmond, B.C., who has served as Deputy-Registrar of the College of Dental Surgeons of British Columbia since 1984, was recently appointed Registrar.

He succeeds Dr. Roy Thordarson who has been appointed Managing Director of the College.

The retirement of former Managing Director Ken L. Croft at the 1986 year-end resulted in Dr. Thordarson serving a dual role in the interim.

In making the announcements, Dr. Serge Vanry, B.C. College president said of Dr. Rocky's appointment that "we benefit from an orderly shift of responsibilities to someone completely familiar with the job."

## Some role changes

Dr. Vanry said the executive director will assume more of an overall managerial responsibility with more emphasis on longer term planning and support to Council on policy issues. The Registrar will continue to deal with the professional aspects of dentistry, and a newly defined position of Director of Member Services has been developed to deal with practice support services for the profession. "This latter role," he said, "is proving to be more necessary as we move into areas of marketing, incorporation and alternative delivery activity."

Dr. Vanry noted that "the registrar's role is a sensitive and demanding one. Dr. Rocky has demonstrated all the qualities we need during his tenure as Deputy-Registrar and we are confident that he will bring the same skills and energy to the senior position."

## UBC graduate

Dr. Rocky was graduated from the University of British Columbia with a BSc, in 1970, and in 1973 received his DMD from the Faculty of Dentistry.

In 1977, he was appointed a part-time member of the Faculty of Dentistry of his Alma Mater, and he continues to serve in this capacity. He was President of the Dental Alumni Association of the University of British Columbia, in 1982.



Dr. Brian Rocky

## Active in the CDA

He has been an active member of the Canadian Dental Association and since 1985 has been a member of CDA's Committee on Alternative Delivery Systems and a sub-committee of CDA, Third Party Dental Plans Committee. He continues to serve with these bodies.

Dr. Rocky is also serving as a member of CDA's Ethics Committee.

He has been an active member of, and chairman of, several committees of the College of Dental Surgeons of British Columbia.

Dr. Rocky is married to Gayle, a practising dentist in British Columbia and the couple have one infant son.

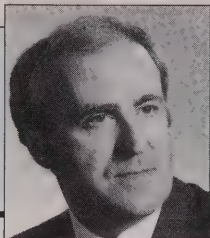
He maintains his practice one day a week.

## Dr. Gordon Roy Thordarson

The new Managing Director of the College, Dr. Roy Thordarson received his DMD degree from the University of Manitoba in 1962. From 1965 to 1967, he attended the University of Washington, Department of Graduate Periodontics and received his Certificate in that specialty in 1967.

He conducted a general practice from 1962-65 and from 1967 to 1976 a specialty practice in periodontics, in West Vancouver. From 1967 to 1970, Dr. Thordarson was also a clinical instructor, part-time at the University of Washington's Department of Graduate Periodontics.

Dr. Thordarson served closer to home as a clinical instructor in the Faculty of Dentistry, University of British Columbia, on a part-time basis from 1970 to 1972 and again from 1976 to 1980. From 1980 to 1984, he continued this service, but in that



# PRESIDENT'S COLUMN

Dr. John R. Robertson

## YOUR MANAGEMENT, YOUR EXECUTIVE

Have you asked yourself, "who are these people called Management and Executive Council?", every time you hear of some decision that has been made by the Board of Governors? Well, perhaps this month's column can shed a little light on who these decision and policy makers are and where they come from in Canada.

Basically, they are like most of you: general practitioners and specialists. They all practice their profession when not on CDA business in Ottawa or elsewhere across the country. They all have ongoing expenses in their office when not practising, and are concerned for their patients when not in their offices. Alternate arrangements must be made for patients in keeping with professional responsibilities and careful patient scheduling is of paramount importance. On top of these everyday in-office experiences, these executive members of CDA perform their Association responsibilities for which you have elected them.

Akin to many organizations, we always seem to seek out those who are busiest to assist us in performing tasks for our national organization. These men, (we unfortunately have no ladies on the Executive Council), are also by and large very busy within their own communities. Many are members of the Rotary club, Lions Club, Kinsmen and similar service organizations. Many others are very active in their respective church groups. All in all, all these men who serve Canadian dentistry so diligently are much like yourselves and are qualified to serve dentistry in their various areas of expertise.

I'll now introduce you to the Executive Council Committee members and tell you where they come from. Your President and Chairman of the Management and Executive Council is Dr. John Robertson from Summerside, P.E.I. Your Past-President is Dr. Brad. Holmes from Kenora, Ont. Your President-Elect is Dr. Ron Markey from Richmond (Vancouver) B.C. These three men comprise your management team who, along with Mr. Jardine Neilson, the Executive Director of the CDA, oversee the day-to-day operations of your Association. The other members of the team are, Dr. John Christie of Nova Scotia, representing the four Atlantic Provinces, Dr. Gilles Dubé of Québec, Dr. Kevin Roach from Ontario, Dr. Jack Neidermayer, from Regina, Saskatchewan, and Dr. Ted Allison, from Calgary, Alberta.

The Executive Council is responsible for conducting the business of the Association and establishes interim policies when necessary, for the management of the Association. The Council establishes administration rules and regulations consistent with the bylaws of the Association, and supervises the maintenance of headquarters property.

All members of the Executive Council have various responsibilities, ranging from liaison to various councils and committees and various ad hoc committees on Executive Council. For example, the Professional Resource Utilization Committee, the Management Committee, the Government Relations Committee, the Roles and Responsibilities Committee — to name a few. You have also heard of the Board of Governors annual meeting and possibly have wondered what the Executive Council does prior to this meeting. Every aspect of dentistry is considered by the Council, such as provision of claim forms, procedure codes, fluoridation policy, taxation problems, insurance problems, government relations and dental awareness.

The Executive Council receives reports and recommendations from our 10 councils, ad hoc committees and other important committees. The recommendations and concerns of these bodies are heard and discussed by the Executive Council as they prepare for the Board of Governors meetings. Two Board meetings are held annually: the Interim Board, generally in April, and the Annual Meeting, in September. At these Board meetings, final decisions are made which impact upon all members of our profession. All of the corporate bodies within the CDA are represented at these meetings.

Throughout the year, between Board meetings, there are several Executive Council meetings. These meetings deal with recommendations and events from the many smaller meetings, conference calls, correspondence from committee members, corporate members, executive directors, provincial secretaries, registrars and many, many others. Much correspondence is necessary in order to assemble the board books, to disseminate all of the information prior to the Board meetings.

Your elected officials, with the support of our dedicated CDA staff, carry out these many hours of service to our profession. In addition to the CDA staff, there are more than 100 volunteers within the profession, who assist in conducting the affairs of the CDA. We cannot function without this group: Volunteers. Can we count on you? Therefore you can see that there are many more individuals involved in the decision making process at the CDA than one can visualize. Each CDA member can assist in this decision-making process. Your concerns can be voiced through your provincial governor, or your Executive Council governor. Also, you can be prepared to serve on a council or committee, when asked to serve your profession. Remember, it is your profession and we are here to serve you.

Only through cooperative effort can we make our profession strong and united.





Dr. G. Roy Thordarson

period, as a clinical instructor in graduate periodontics.

He became Registrar of the College of Dental Surgeons of British Columbia in 1977 and during the same period, 1977 to 1980, Dr. Thordarson was Director of Education for the B.C. College.

### Active in CDA

In addition to being a valued member of provincial and specialty bodies, Dr. Thordarson has been an active participant in CDA committees and councils. He served on the Council on Ethics as a member from 1980 to 1983 and as chairman, until 1986. In 1985-86, he was a member of the Council on Education and Accreditation (representing provincial licensing authorities.)

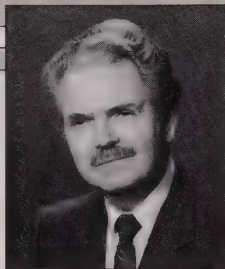
He continues to be a member of the joint committee, CDA/Medical Services Branch, Health and Welfare Canada, on Dental Care for Native People.

Dr. Thordarson has received several honors for his services and support, including an Honorary Membership in the British Columbia Dental Hygienists' Association and a Fellowship from the International College of Dentists.

His manuscripts on subjects of widespread interest to the dental profession have been published in this Journal, including: *Principal/Associate Agreements*, published in February, 1984.

### Active in athletics

Dr. Thordarson says athletic activities are his principal form of relaxation. These include downhill and cross country skiing, squash, racquetball, tennis, running and sailing.



## DID YOU KNOW?

by Dr. Ralph Crawford  
Chairman, Membership Committee

### OBJECTIVES!

**DID YOU KNOW?** Last month this column dealt with CDA's Mission Statement and this month we will deal with what naturally comes after the Mission — Objectives.

No single, worthy achievement has ever been attained without a goal or objective. We humans function with intellect and will, guided by choices of good and evil. Always our most laudable accomplishments are guided by our choice of a designated purpose.

**DID YOU KNOW?** Probably associated with the "busyness dilemma" of the day, there is a growing number of clinicians and seminar leaders who are touring the lecture circuit with a variety of solutions to Dentistry's problems that is only surpassed by the size of the fee they demand. However, one solution or suggestion appears common and dominant — set your goal; determine your purpose and strive to fulfill your objectives.

**DID YOU KNOW?** The Canadian Dental Association by virtue of being incorporated by an Act of Parliament in 1942 set forth its *objectives* that are as valid today as they were 45 years ago. . . .

1. to cultivate and promote the art and science of dentistry and all its collateral branches, and to protect and maintain the honor and interests of the dental profession;
2. to conduct, direct, encourage, support or provide for exhaustive dental and oral research;
3. to elevate and sustain the professional character and education of dentists;
4. to promote mutual improvement, social intercourse and good-will among the members of the profession;
5. to enlighten and direct public opinion in relation to oral hygiene, dental prophylaxis, oral health and advanced scientific dental service;
6. to disseminate knowledge of dentistry and dental discoveries;
7. to have cognizance of and safeguard the common interests of the dental profession;
8. to publish dental journals, reports and treatises; and
9. to promote the delivery of high quality, comprehensive dental (oral) health care service to all residents of Canada;
10. to do all further or other lawful and things and acts as are incidental or conducive to the attainments of the above objects.

**DID YOU KNOW?** That no single action in our dental offices; no particular resolution of a CDA committee or council; or any singular pronouncement in Dentistry's name should fall outside the bounds of those carefully delineated objectives. If they do, then they are off course!!

*"He that will not reason is a bigot;  
he that cannot reason is a fool; and  
he that dares not reason is a slave."  
(Sir William Drummond — 1585-1649)  
Scottish Poet*

## ARE YOUR PEARLY WHITES HEADING FOR THE PEARLY GATES?



Adult tooth loss is a serious problem. How serious? One half of all Canadians over 60 are completely toothless! Major cause: gum disease. Don't let it happen to you. Floss and brush carefully. And see your dentist for preventive checkups.

DENTAL HEALTH  
*Good For Life*

CANADIAN DENTAL ASSOCIATION



Dr. Ken Skinner

## MANITOBA ASSOCIATION ELECTS NEW PRESIDENT

Dr. Ken Skinner became President of the Manitoba Dental Association at the 103rd Annual Meeting of the Association on January 15th, 1987, at the Westin Hotel, Winnipeg.

Dr. Skinner has practised dentistry in Winnipeg since his graduation from the University of Manitoba in 1973.

Dr. Skinner has served as Chairman of the Manitoba Dental Association Auxiliaries' Services Committee and as Member of the Dental Act Committee. Since 1982 he has been actively involved in the Canadian Dental Association Council on Health Care.

At present, Dr. Skinner is a member of the Manitoba Dental Association Board and is serving as Chairman of its Communications Committee.

Prior to his election as President, Dr. Skinner held the position of Vice-President of the Manitoba Dental Association.

tion. As President, Dr. Skinner hopes to make a significant contribution to the Manitoba Dental Association's mandate for 1987:

'Improved communication between dentist and patient, and subsequently a better understanding between the two.'

Others serving on the Board of the Manitoba Dental Association for 1987-88 are...

|                      |                                       |
|----------------------|---------------------------------------|
| Dr. Garry Austman    | — Steinbach —<br>Vice President       |
| Dr. Orville Heschuk  | — Dauphin —<br>Past President         |
| Dr. Marty Dveris     | — Winnipeg                            |
| Dr. Marshall Peikoff | — Winnipeg                            |
| Dr. Joe Stasiuk      | — Portage la<br>Prairie               |
| Dr. Patrick Sheehan  | — Thompson                            |
| Dr. Jack Purdie      | — Appointee,<br>Minister of<br>Health |
| Ms. Jo Ann Acorn     | — Auxiliaries<br>Member               |

## AD LIB

by Cuspid

## CHAIRSIDE MANNER

Nobody likes going to the dentist, right? Not even dentists.

Well, that's the general perception... but before all the collective wailing and gnashing of teeth begins, let's consider that perception. Hands up all those who actually *like* going to physicians, optometrists, chiropractors, lawyers, accountants or auto mechanics?

Having, I hope, put things a little more in perspective, let's take a closer look at how you look. Dentists are quite possibly viewed in much the same manner as physicians, in the sense of the much quoted public sentiment that "my doctor's great but I don't care for the profession as a whole." Yet dentists' personalities are surely only minimally determined by what they do for a living: as a group they have no more dull or bright individuals than any other profession. It's just that they seem to think of themselves, as a group, as being singled out for analysis and dissection by others. How often, by contrast, does one hear a teacher asking someone in some other field what he thinks of teachers? Or a lawyer enquiring about the current stock of the legal profession?

If there is a collective antipathy towards dentists, this may have to do with your authoritative and controlling role in an increasingly egalitarian society. And yet, certainly, the dentist is an authority when he's talking about dentistry. And so he should be: I don't want a dentist to say to me: "Maybe we should take this one out — what do you think?" I want him to know what he's up to. But I don't consider dentists to be authority figures when they are discussing a best-seller — unless they wrote it.

Studies have shown that the view from the chair is very much influenced by the dentist's communication skills. It's been shown time and time again that patients want to know what's happening, particularly so far as the level of discomfort they might expect is concerned. They also want to know in direct and straightforward terms — not simply to be listening in to a stream of professional jargon that the dentist is directing to his assistant.

One study, conducted by Procter & Gamble, found that "quality of care" was the most important virtue sought by patients in their dentists... but this was followed closely by such interpersonal factors as a caring attitude and friendliness. The survey also showed that most patients want a continuing and personal involvement in their treatment, and a full explanation of their condition.

Still another study showed that satisfaction with dental care increased with dentists' communication that was accepting and caring. It also showed that patient anxiety decreased with rising satisfaction.

My point in all this really is that patients not only want to feel well — they want to feel good. You're there not only to *do* good — but to *do* well. The first comes from training, technique and skill, the second comes from what might be called chairside manner.

## THE CANADIAN ACADEMY OF ORAL RADIOLOGY

by Dr. Colin Price,  
Secretary/Treasurer of the  
Academy

*(This is the latest in a series of features on dental organizations in Canada.)*

The history of oral radiology in Canada is very much dependent on one person, Dr. H.M. Worth. This truly unique man emigrated from England in 1939 because of failing health. Now, 48 years later, he thrives in Vancouver, still alert and perceptive, and fit enough to tend to a garden which puts most people to shame. Dr. Worth was acknowledged at the Centennial Convocation of the University of Toronto in 1975 as the "architect of oral radiology". Most Canadian oral radiologists and many elsewhere in the world have been influenced in their careers by this great man.

Three events have been prominent in the development of oral radiology in Canada: the provision of postgraduate education, the recognition as a specialty, and the inception of the Canadian Academy of Oral Radiology. Each of these events was heavily dependent on the others.

Dr. H. Guy Poyton, then Head of Oral Radiology at the University of Toronto, made the first approach in 1959 towards the setting up of a postgraduate diploma. A few years later the idea was again presented, this time as a Master's program, since most potential applicants were expected to pursue careers as teachers. The first students were registered in 1965. Toronto continues to be the only Dental



School in Canada offering a graduate program in oral radiology.

The possibility of specialty recognition in oral radiology was explored in 1966. In 1970 the CDA Council of Education recognized that the Toronto graduate program was of sufficient standing to justify specialty status. A formal application was made two years later, and the CDA conferred specialty recognition on oral radiology in 1973 and section status the following year.

As the graduate program matured and the specialty recognition developed, it became evident that there was a need for a national body to represent oral radiology. Much of the spade work involved in setting up the Canadian Academy of Oral Radiology was taken on by Dr. Axel Ruprecht. The founding meeting was held in Toronto on January 15, 1973. Eight founding members attended.

Meetings, consisting of a business annual general meeting and a scientific component with papers and case reports, have been held each year since 1973. Current membership runs at about 36 and is approximately evenly divided between Active and Associate Membership. The Active category comprises those whose careers are predominantly devoted to oral radiology.

The Royal College of Dentists of Canada, incorporated in 1965, admitted five oral radiologists as Fellows in 1974. Initially these were in the section of dental sciences, but were later transferred to the specialty of oral radiology. There are currently seven Fellows and three Members of the Royal College in this specialty. Fifteen oral radiologists are licensed as specialists with provincial licensing bodies. This figure includes five specialists in Quebec where a joint specialty of oral radiology and oral medicine is recognized. The majority of oral radiology specialists in Canada are in full-time employment in university faculties of dentistry. Not all dental schools have certified oral radiologists on their payrolls.

The Canadian Academy of Oral Radiology helps communication between oral radiologists throughout Canada. The vast distances involved make communication difficult, especially in such a small specialty. The Academy also aids communication with other branches of dentistry and medicine. The CDA is an important link in this respect. The Academy has helped the CDA develop guidelines for the education of dental assistants and hygienists. It has helped in the formation of guidelines for advanced education in oral radiology and for the accreditation of programs. Input has been provided for revision of the Radiating Emitting Devices Act and the CDA Guidelines for the Control of Radiation in the Dental Office. Expertise was made available during the CDA Dental Awareness Program.



*At a recent organizational meeting in Cologne, Professor Dr. Rudolf Voss, President of the German Scientific Dental Society (DGZMK), reviews final plans for the new BDZ/DGZMK/Dentsply Student Clinician Program. Others participating are (standing, l. to r.) Professor Dr. Peter Schulz, Executive Director of the Federal Association of German Dentists; Dr. Gallus Sauter, Vice President of DGZMK; Mr. Gerhard Schmidt, Vice President of Dentsply GmbH; and Mr. Adolf Schneider, Vice President of DGZMK.*

## DENTSPLY STUDENT CLINICIAN PROGRAM EXTENDED TO GERMANY

The Dentsply-sponsored Student Clinician Program, which has been a popular feature at both Canadian Dental Association conventions and American Dental Association conventions, is being expanded into the Federal Republic of Germany.

The Federal Association of German Dentists (BDZ), the German Scientific Dental Society (DGZMK) and Dentsply recently finalized plans to inaugurate an Annual Student Clinician Program. The first German Student Clinician Program will take place in Braunschweig, West Germany, in October 1987.

The format will follow the same pattern as Dentsply-sponsored Student Clinician Programs in other countries, including those in the U.S., Canada, the United Kingdom and Australia.

A student deciding to enter the Program undertakes to present his or her research findings on a clinical or scientific project leading to the development of a table clinic concerned with some phase of research, diagnosis or treatment as related to the profession of dentistry. Following individual university qualification procedures, one undergraduate student from each of the twenty-seven dental schools in the Federal Republic of Germany will be granted the opportunity to participate in the national Program. Plans call for student participation in two Categories: Clinical Application and Techniques and Basic Science and Research.

The expenses of all students selected for

participation in the BDZ/DGZMK/Dentsply Student Clinician Program will be underwritten by Dentsply. Student clinics will be reviewed by a qualified panel of judges for each Category and three winners will be chosen. The First Place Award winner will be invited to attend the 128th Annual Session of the American Dental Association at Las Vegas, Nevada, during October 10 through 14, 1987, as an honored guest of Dentsply International. Cash prizes will be made available to winners of the Second and Third Place Awards.

The BDZ/DGZMK/Dentsply Student Clinician Program will be held annually in conjunction with the Annual Meeting of the German Scientific Dental Society. Every third year, it will take place along with the Dentists' Day conducted by the Federal Association of German Dentists.

## WELL-KNOWN MONTREAL DENTIST PASSES AWAY

Dr. Charles Clayton Bourne, a longtime Montreal dentist, passed away recently at the age of 83.

Born in Atlin, B.C., in April 1904, Dr. Bourne moved to Montreal as a boy and attended both Montreal High School and McGill University. He was employed for some time by the Sun Life Assurance and Northern Electric Companies and then returned to McGill Faculty of Dentistry. He graduated from McGill with his dental degree in 1937.

Following a year's internship at the Royal Victoria Hospital in Montreal, Dr. Bourne practised dentistry in Bourlamaque, Quebec for five years, before returning to practice in Montreal. He served the Weredale Boys



*Dr. Bourne*



Home for many years as a dentist. He was also active in cleft palate reconstruction at the Montreal Children's Hospital and was a sessional lecturer at McGill University in Dental History.

His interest in dental history led to the publication of several articles in this Journal on dental history, and he also served for many years as the historian and archivist of the Montreal Dental Club. Dr. Bourne also served on the Club's executive and was a longtime member.

He retired from the practice of dentistry in 1977.

A keen sportsman, Dr. Bourne represented McGill during his college days, and represented Canada as a swimmer in the 1924 Olympic Games in Paris. He was also an enthusiastic angler, and was an active member of both the Lanthier Fish and Game Club and the Sixteen Island Lake Fishing Club.

He was pre-deceased by his wife, Margaret Boa, in 1985 and by a brother, Dr. Alan Bourne in 1968. He is survived by another brother, Dr. Munroe Bourne and a large number of nieces and nephews.

## UNIVERSITY OF ALBERTA HAS DENTAL MUSEUM

The University of Alberta has gathered enough dental artifacts and memorabilia since the collection began in 1952, to now house a full-fledged dental museum.

Display space on the fourth floor of the Dentistry/Pharmacy Centre is currently being reconstructed, and consultants and museologists have been utilized for the past three years in order to showcase the collection.

The dental collection at the University of Alberta contains samples of dental history from early man to the present day. Included in the collection are dinosaur dentitions, dental extraction instruments, ivory dentures from Napoleon's time, antique dental chairs, travelling kits for itinerant dentists, foot treadle dental drills, bloodletting instruments and early dental x-ray apparatus.

Among the uniquely Canadian artifacts on display are the first dental diplomas issued in the Northwest Territories and the first dental degree certificate granted by the University of Alberta in 1927. Irreplaceable dental casts of the severely worn dentitions of Inuit who used their teeth for softening animal skins are also on display at the Museum.

The Museum, once it is completed will feature display panels depicting the methods of relieving toothache from ancient Egyptian times until today. Currently a large number of dental drugs, filling materials, imple-

ments for moving, removing or replacing teeth fill display shelves.

The Museum's reconstructed displays are expected to be completed within six months.

*(Editor's Note: The Journal would like to thank Dr. G.H. Sperber, Curator of the Dental Museum at the University of Alberta, for this information.)*

## SALES TAX RETURNS TO DENTAL MATERIALS

*(Editor's Note: The recent federal budget restored some federal excise tax to some dental materials which had been previously tax exempt. The following letter to the dentists of Canada was sent by Dr. Robert Hicks, Chairman of CDA's Taxation Committee.)*

### Re: Return of Federal Sales Tax on Dental Materials

The February 18, 1987 Federal Budget has removed "Materials Used in Medical Reconstructive Surgery" from their previously tax-exempt status in Section 19, Part VIII, Schedule III of the Excise Tax Act. It was under Section 19 that dental materials used in dental reconstructive procedures were manufactured in, or imported into Canada, without the application of federal sales tax. This amendment to the Excise Tax Act became effective on the day following the Budget Speech — February 19, 1987.

In addition, a further amendment to the Excise Tax Act, Section 5, Part VIII, Schedule III, specifies that articles and materials used in the manufacture of artificial teeth remain exempt from tax but such exemption is "limited to articles and materials acquired by a manufacturer or a producer" for incorporation into or to form a constituent or component part of the artificial teeth. Since dentists are not classified as manufacturers or producers, this removes the tax-exempt status that we previously had on dental materials for use in the manufacture of artificial teeth (dentures, bridges, etc.).

Orthodontic orthopaedic appliances, orthodontic removable appliances, retaining or maintaining appliances and habit breaking appliances remain as tax-exempt goods. However, orthodontic fixed banding appliances (i.e. all materials and articles used in the in-mouth assembly of fixed banding appliances) will now have the federal sales tax applied, since they were categorized as materials under Section 19, Part VIII of Schedule III.

On a small positive note, epinephrine and its salts are now exempt from federal sales tax. It appears, on this basis, that local anaesthetic solutions should be exempt from federal sales tax.

It should be noted that the tax refund procedures detailed in the February, 1987 CDA Communiqué still apply to goods purchased or imported from July 1, 1985 to August 22, 1986. Please refer to the article in the Communiqué for specific details and continue your discussions with your dental suppliers or laboratories regarding their policy, with respect to credits or future price adjustments, in the event they apply for and receive a tax refund from Revenue Canada.

The removal of dental materials from their tax-exempt status by the Minister of Finance is most disturbing in light of the indepth review by Revenue Canada, over the past year, which resulted in dental materials qualifying for tax-exempt status under the existing law.

The changing of the law by the Minister of Finance, and the accompanying support of the Department of Finance, appears to be an action to "target" dental practices for increased tax revenue. However, increased cost of dental materials within a dental practice will eventually result in an increased cost of dental service to the dental patient.

It is most important at this time to contact your Member of Parliament in order to express your objection to the application of federal sales tax on dental materials used in reconstructive dental procedures. The following points should be included in your discussions:

- The current amendment removed sales tax relief previously given to those Canadians who were improving their dental health by the retention of their natural dentition. However, those Canadians who have lost their natural dentition and require dental prostheses will continue to have tax relief under Section 5, Part VIII, Schedule III of the Excise Tax Act.
- The basic principle of the current amendment to Section 19, Part VIII, Schedule III is contrary to the incentive strongly promoted by the Canadian Dental Association and all dentists in Canada — that retention of natural dentition will ensure good dental health for life.
- The current amendment to the Excise Tax Act creates application of federal sales tax in the area of delivery of health services. Is this a new policy of the Federal Government and will additional methods of taxing health care in Canada be considered in the future?

Please contact your Member of Parliament soon. If possible, please write a letter to CDA to inform us of the response by your Member of Parliament. If you require additional information for your communications with your M.P., please contact Sandra Deziel at CDA (613-523-1770).

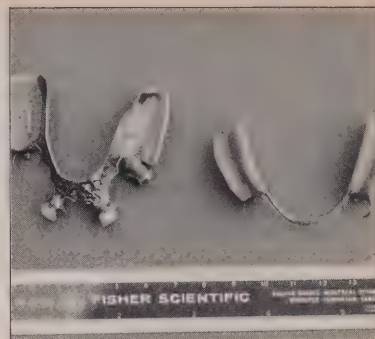




The crime, which took place in 1975, is still unsolved and the victim is still unidentified. The body of a young woman, between 25 and 35 years old was found floating face down in the Nation River, near Casselman, Ontario, which is a 40 minute drive southeast of Ottawa. An autopsy performed at the time, (in May 1975), revealed that the woman had been murdered by strangulation. She had 10 restorations in her natural teeth and also had upper and lower partial dentures. The coroner's description of the dentures follows.

Any dental practitioner who might recognize either the dental work, the chart or the photograph is asked to contact, *in complete confidence*, either Mr. Robert D. Clark, Producer, Current Affairs, Canadian Broadcasting Corporation, P.O. Box 3220, Station C, Ottawa, Ontario, K1Y 1E4, 613-724-5325, or Ms. Edith Cody-Rice Legal Consultant, Canadian Broadcasting Corporation, P.O. Box 8478, Ottawa, Ontario, K1G 3J5. 613-738-6619.

The CBC is currently working with the police on the case, and Mr. Clark told the Journal that any replies which were received would be kept in the strictest confidence. Anyone with information that might be of assistance may call *collect* to either of the above numbers.



Maxillary cast chrome partial denture (horse-shoe palate)

- Two laterals Steele's facings 1 plastic  
1 porcelain
- Mesial and distal rests from Steele's backings resting on distal of each central and mesial of each cuspid.
- Cast circumferential clasps with distal occlusal rests on right and left second bicuspsids.
- First and second molars replaced by porcelain denture teeth with flanges.

Mandibular cast chrome (free-end) partial denture

1. Major connector-lingual bar
2. Cast circumferential clasps and distal occlusal rests on each second bicuspid
3. First and second molars replaced by porcelain denture teeth.
4. Free-end saddles had been relined recently.

Composition of material of dentures is cobalt, iron, manganese and chromium.

ATN  
 ORI#   
 Function ☒ A - Add ☐ R - Remove ☐ M - Modify ☐ Q - Query Shaded Fields Mandatory  
 Category  DENT Dis-aster AM Record  
 Dental Type AM Before Death PM After Death Enter, and dental type Cross reference to Missing Person Record  
 DT: ☒ NM Enter as prime record All fields apply

Person's Surname   
 SNME   
 Given Name 1  Given Name 2  Given Name 3   
 G1:  G2:  G3:   
 Sex ☒ F Race:  W  H  I  J  K  L  M  N  O  P  Q  R  S  T  U  V  W  X  Y  Z  
 Date of Birth   
 DOB:   
 HT:  WT:   
 Metric Height  or Metric Weight   
 MHT:  MASS:   
 Hair Colour  HAIR:   
 Eye Colour  EYE:

To be completed by a Dentist or Coroner: (Please convert child's dentition to appear as adult)

☐ NONE No teeth treated or absent  
 Enter X for each tooth treated or absent  
 (Enter full or partial plates as tooth absent)

|               | Upper Jaw |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   | Lower Jaw |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
|---------------|-----------|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|--|--|
|               | 18        | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2         | 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |  |
| Teeth Treated |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Teeth Absent  |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Right Jaw     |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Centre        |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Left Jaw      |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Teeth Treated |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Teeth Absent  |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Right Jaw     |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Centre        |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| Left Jaw      |           |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |

Indicate if any or all of the following are present:

Special Treatment: ☐ G - Gold Fillings ☒ R - Replaced Tooth ☐ E - Endodontics ☐ A - Abnormalities  
 SPLT: ☐ Dental Remarks: ☐  
 DREM: ☐

Additional Comments, Technical Explanations, etc.

# 15 MOD ALLOY  
 # 14 MOD ALLOY  
 # 13 CLASS II DISTAL ALLOY  
 # 11 CLASS III DISTAL Composite-Silicate  
 # 21 CLASS III DISTAL Composite-Silicate  
 # 23 CLASS III DISTAL ALLOY  
 # 45 DO ALLOY  
 # 44 MO ALLOY

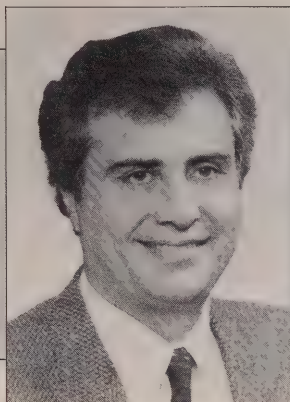
# 33 CLASS II DISTAL ALLOY  
 34 MOD ALLOY  
 35 DO ALLOY + CLASS II ALLOY  
 # 13 - 1/2 Crown lost

RENDEZ-VOUS  
'87

Montréal  
May 24-28 mai,  
1987

Canadian Dental Association  
Convention in conjunction with  
Les Journées dentaires

Congrès de l'Association dentaire  
canadienne conjointement avec  
les Journées dentaires



## CANADIAN DENTAL ASSOCIATION CONVENTION

IN CONJUNCTION WITH  
*les journées dentaires 1987*

Michel Jahjah, D.D.S.  
General Chairman

## CDA IN MONTREAL . . . COUNTDOWN

Only a few more days to go . . . until RENDEZ-VOUS '87!

All hands on courses were sold out as far back as early March! Limited attendance lectures by Frank Faunce and Mel Tekavec on May 24th and 25th have sparked so much interest across the country that we have now expanded the lecture rooms to accommodate the great demand! On-site registration will therefore be possible for these two courses.

Over and beyond the wide range of lectures we have publicized to date, your attention will be caught by two other important facets of our scientific program, table clinics and projected clinics.

Over 35 table clinics will be presented on Tuesday and Wednesday afternoons (May 26th & 27th). These also include the CDA/DENTSPLY Student Table Clinic Program, where one student from each dental faculty in Canada takes part in this competition and the winner and first runner-up are awarded a prize.

Thanks to the cooperation of The Veterans' Administration Dental Education Center in Washington, D.C., a rich selection of over 100 film cassettes, lasting from 5 to 30 minutes, will be at your disposal for private viewing. Excellent programs are also available for auxiliaries. For those of you who prefer a "theatre-style ambiance", presentations on film by well-known speakers will be projected during the entire convention. The duration of each film varies from two to four hours. More information on these two programs will be detailed in the program booklet.

Pioneers! That's how we feel this year as we try out a new approach to our convention program — a live demonstration transmitted via satellite from the University of Montreal to the Convention Centre. Participants in the lecture hall at the Centre will be able to ask the clinician questions while he performs certain techniques on a patient at the University. How will all this be done? Come and see for yourself!

If you have not pre-registered for the convention, more than 20 charming and very efficient ladies will be waiting for you at the Centre to register you on site. If you have been following this column, as I hope you have, come and shake hands with any member of the Executive Committee (look out for red ribbons!) and give him the password "**Rendez-vous '87'**" — we'll have a fun surprise for you!

Are you ready for some figures? Over 80 clinicians from North America and Europe are taking part in the convention. More than 40 staff members will be involved in the five-day program. More than 40 Committee members and volunteers, from the Executive Committee, Coordination Committee, Scientific Committee, Local Arrangements Committee, Welcoming Committee, as well as Presiding Chairmen, will comb the Centre during the convention to remove any trace of a potential problem! For some of these persons, the convention really begins two weeks prior to Opening Day, as they attend a special dry-run meeting on site at the Centre. During this meeting, every planning aspect is reviewed carefully, step by step, and various tasks are assigned in order to ensure that every angle of the convention is under control. In other words, we will cater to your every whim!

I can't believe this is already my last column before the convention — My monthly "chat" with you has been one of my most pleasurable and diverting tasks to date and I wish to thank the C.D.A. Journal ever so warmly for the opportunity given to me.

For those of you who are coming to the convention, I am greatly looking forward to meeting you personally; for those of you who are not . . . you don't know what you are missing!

And, the planning is over!

Thank you for your interest in . . . RENDEZ-VOUS '87.



# THE RENDEZ-VOUS COUNTDOWN!

## MAY/MAY

| DIM / SUN                                                                                                                                                                          | LUN / MON                                                                                                                                                                      | MAR / TUE | MER / WED | JEU / THU | VEN / FRI | SAM / SAT |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| <small>AVRIL / APRIL</small><br><small>DIS / M / M / T / W / T / F / S / S</small><br>1 2 3 4<br>5 6 7 8 9 10 11<br>12 13 14 15 16 17 18<br>19 20 21 22 23 24 25<br>26 27 28 29 30 | <small>MAY / MAY</small><br><small>DIS / M / M / T / W / T / F / S / S</small><br>1 2 3 4 5 6<br>7 8 9 10 11 12 13<br>14 15 16 17 18 19 20<br>21 22 23 24 25 26 27<br>28 29 30 |           |           |           | 1         | 2         |
| 3                                                                                                                                                                                  | 4                                                                                                                                                                              | 5         | 6         | 7         | 8         | 9         |
| 21 days                                                                                                                                                                            | 20 days                                                                                                                                                                        | 19 days   | 18 days   | 17 days   | 16 days   | 15 days   |
| 10                                                                                                                                                                                 | 11                                                                                                                                                                             | 12        | 13        | 14        | 15        | 16        |
| 14 days                                                                                                                                                                            | 13 days                                                                                                                                                                        | 12 days   | 11 days   | 10 days   | 9 days    | 8 days    |
| 17                                                                                                                                                                                 | 18                                                                                                                                                                             | 19        | 20        | 21        | 22        | 23        |
| 7 days                                                                                                                                                                             | 6 days                                                                                                                                                                         | 5 days    | 4 days    | 3 days    | 2 days    | 1 day     |
| 24                                                                                                                                                                                 | 25                                                                                                                                                                             | 26        | 27        | 28        | 29        | 30        |
| Welcome to<br>the convention!                                                                                                                                                      |                                                                                                                                                                                |           |           |           |           |           |
| 31                                                                                                                                                                                 |                                                                                                                                                                                |           |           |           |           |           |

1987

## CANADIAN DENTAL ASSOCIATION CONVENTION

in conjunction with les journées dentaires 1987  
PRE-CONVENTION

# PRESIDENTS' BALL... AND CASINO EVENING

DINNER • DANCING... AND A CASINO!

NAT RAIDER & HIS ORCHESTRA

Meridien Hotel

Tuesday, May 26

7:00 p.m. to midnight

*Reservations required (see Registration Form)*

## RENDEZ-VOUS '87 EVENING

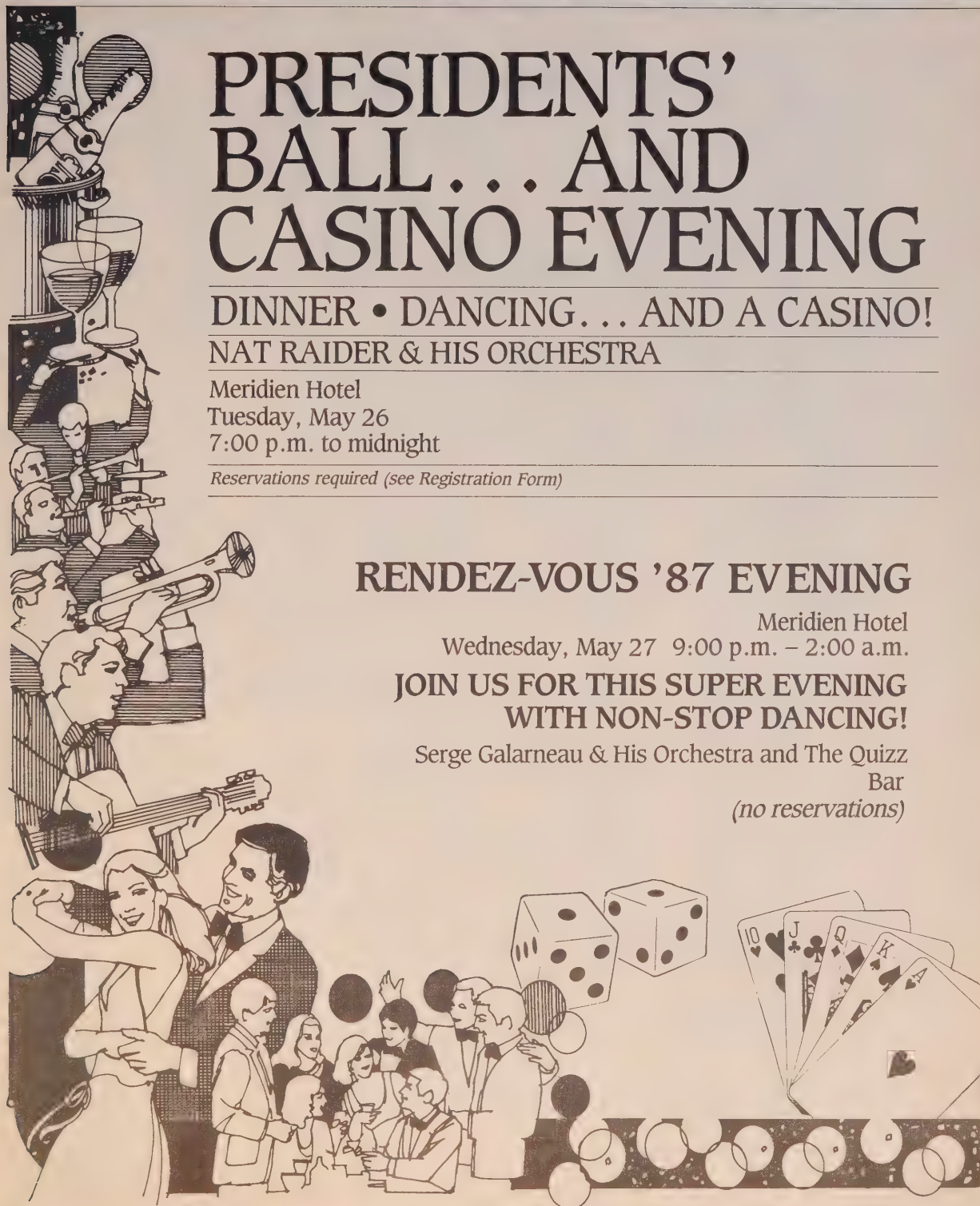
Meridien Hotel

Wednesday, May 27 9:00 p.m. – 2:00 a.m.

JOIN US FOR THIS SUPER EVENING  
WITH NON-STOP DANCING!

Serge Galarneau & His Orchestra and The Quizz  
Bar

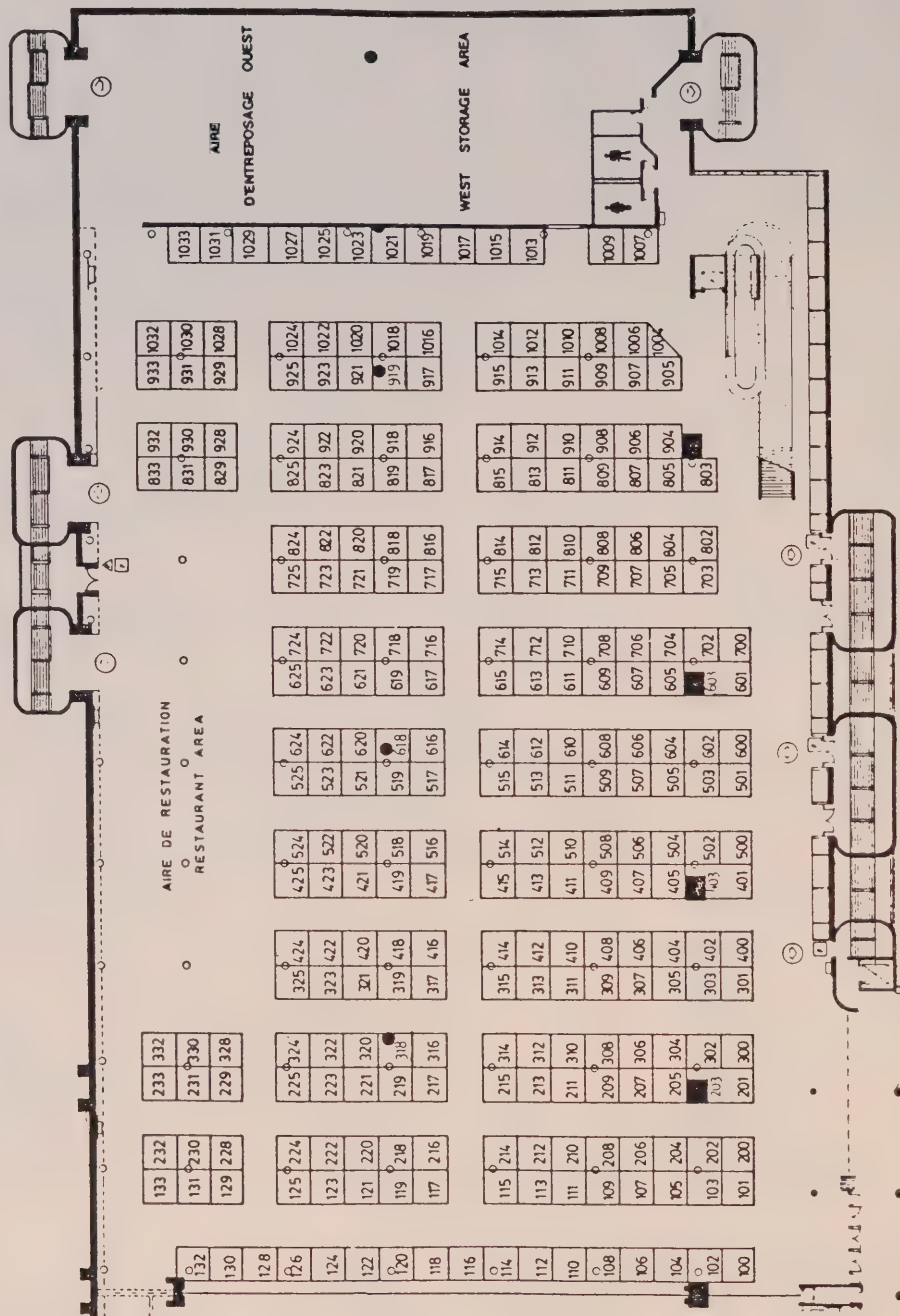
*(no reservations)*





# CANADIAN DENTAL ASSOCIATION CONVENTION

in conjunction with les journées dentaires 1987  
PRE-CONVENTION



# CANADIAN DENTAL ASSOCIATION CONVENTION

in conjunction with les journées dentaires 1987  
PRE-CONVENTION

## LIST OF EXHIBITORS

| COMPANY NAME                                                     | BOOTH NO.                                                                             |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>A</b>                                                         |                                                                                       |
| Adams Brands Inc. ....                                           | 306-308                                                                               |
| A-Dec, Inc. ....                                                 | 818-820-822-824                                                                       |
| Amadent ....                                                     | 1032                                                                                  |
| Aseptico/North Pacific Dental ....                               | 932                                                                                   |
| Association des chirurgiens dentistes<br>du Québec ....          | 117-119-121-123-125<br>216-218-220-222-224                                            |
| Astra Pharmaceuticals Canada Ltd. ....                           | 910                                                                                   |
| <b>B</b>                                                         |                                                                                       |
| Beaulab, Les Produits Dentaires Inc. ....                        | 823                                                                                   |
| Belmont Takara Company<br>Canada Ltd. ....                       | 400-402-404                                                                           |
| Benson Medical Industries Inc. ....                              | 711                                                                                   |
| Block Drug Company (Canada) Ltd. ....                            | 129-131                                                                               |
| Bosworth, Harry J. Company ....                                  | 406                                                                                   |
| Brasseler U.S.A. Inc. ....                                       | 215                                                                                   |
| Braun Canada Ltd. ....                                           | 208                                                                                   |
| Britley House Corp. (Division of<br>Rutland Biotech Ltd.) ....   | 1031                                                                                  |
| Budget Dental Supplies Inc. ....                                 | 105                                                                                   |
| Buffalo Dental Mfg. Canada/Novocol ....                          | 713-715                                                                               |
| Busse Dental Supplies ....                                       | 1029                                                                                  |
| Butler, John O. Company ....                                     | 610-612-614                                                                           |
| <b>C</b>                                                         |                                                                                       |
| C. & B. Dental Laboratories Inc. ....                            | 324                                                                                   |
| Canada Dentaire/Denco ....                                       | 716-717-718<br>719-720-721-722-723-724-725                                            |
| Caulk, The L.D. Co. of Canada ....                               | 504-506-509                                                                           |
| C.D.S.P.I. ....                                                  | 802-804                                                                               |
| Cusum Ortho Organizers ....                                      | 330                                                                                   |
| Charton Laboratoires (Division Herdt &<br>Charton Inc.) ....     | 909                                                                                   |
| Classic Dental Laboratories ....                                 | 213                                                                                   |
| Coe Laboratories Inc. ....                                       | 414                                                                                   |
| Colgate-Palmolive Canada ....                                    | 700-702                                                                               |
| Columbus Dental ....                                             | 917                                                                                   |
| Compagnie Dentaire America Inc. ....                             | 604-606                                                                               |
| Condylator - Suisse ....                                         | 1019                                                                                  |
| Cook-Waite Laboratories (Division of<br>Sterling Drug Ltd.) .... | 907                                                                                   |
| Cortex, les Systèmes Ltée ....                                   | 916-918-920                                                                           |
| C.U.M.L. ....                                                    | 605                                                                                   |
| <b>D</b>                                                         |                                                                                       |
| Debar Gold Ltd. ....                                             | 408                                                                                   |
| Degussa Canada Ltd. ....                                         | 116-118                                                                               |
| Demetron ....                                                    | 107                                                                                   |
| Den-Mat Corp. ....                                               | 132                                                                                   |
| Dental Abrasives International ....                              | 933                                                                                   |
| Dentalex Dental Supply ....                                      | 310                                                                                   |
| Den-Tal-Ez ....                                                  | 817-819                                                                               |
| Dentarium Laboratoire ....                                       | 816                                                                                   |
| Dent Esthérium Inc. ....                                         | 115                                                                                   |
| Dentservice ....                                                 | 106-108                                                                               |
| Dentsply Canada Ltd. ....                                        | 500-501<br>502-503-505-507                                                            |
| Dépôt Dentaire (Canada) Limitée ....                             | 317-319<br>321-323-325-416-417-418-419-420-421-422<br>423-424-425-516-518-520-522-524 |
| Dominion Securities Inc. ....                                    | 931                                                                                   |
| <b>E</b>                                                         |                                                                                       |
| Efos Inc. ....                                                   | 929                                                                                   |
| Ellman International Mfg. Inc. ....                              | 617                                                                                   |
| Encyclopaedia Britannica ....                                    | 1014                                                                                  |
| Essential Dental Systems ....                                    | 109                                                                                   |
| Eurodent Industriale S.P.A. ....                                 | 201-203-205-207                                                                       |

| COMPANY NAME                                               | BOOTH NO.           |
|------------------------------------------------------------|---------------------|
| Exan Computer Systems & Services Ltd. ....                 | 401-403             |
| Express Dental Supplies Inc. ....                          | 122-124-126-128     |
| <b>F</b>                                                   |                     |
| First City Medical Leasing ....                            | 407                 |
| Focus Multi-Systèmes Inc. ....                             | 110-112-114         |
| Force 3 Médicale Inc. ....                                 | 120                 |
| <b>G</b>                                                   |                     |
| G.C. International ....                                    | 111                 |
| Germiphene Company Ltd. ....                               | 410                 |
| Gilbert's Dental Supplies Inc. ....                        | 209                 |
| Gingi-Pak ....                                             | 230                 |
| Globdent Ltée ....                                         | 608                 |
| <b>H</b>                                                   |                     |
| H.C.C. Hygenic Corporation of Canada Inc. ....             | 621                 |
| Hoehst Canada Inc. ....                                    | 623-625             |
| Horner, Frank W. Inc. ....                                 | 301-303-305         |
| Hu-Friedy Mfg. Co., Inc. ....                              | 615                 |
| <b>I</b>                                                   |                     |
| Infogescm 2000 Ltée ....                                   | 307                 |
| Inter-Dent ....                                            | 316                 |
| International College of Oral Implantologists ....         | 231                 |
| Inter-Unitek Canada Ltd. ....                              | 911-913-915         |
| Ishiyaku Euroamerica, Inc. ....                            | 311                 |
| Ivoclar-Vivadent Inc. ....                                 | 714                 |
| <b>J</b>                                                   |                     |
| Johnson & Johnson Inc. -<br>Dental Products ....           | 703-705             |
| Johnson & Johnson Inc. -<br>Health Products Division ....  | 707                 |
| <b>K</b>                                                   |                     |
| Kaycor International Ltd. ....                             | 906-908             |
| Kerr Canada ....                                           | 413-415             |
| <b>L</b>                                                   |                     |
| L. & R. Manufacturing Company ....                         | 101                 |
| Laboratoire Dentaire Lafond,<br>Joly et Associés Inc. .... | 513-515             |
| Lafond & Marston Inc. ....                                 | 315                 |
| Lang Dental Mfg. Co., Inc. ....                            | 607                 |
| Lindberg & Homburger Ltd. ....                             | 412                 |
| <b>M</b>                                                   |                     |
| 3M Canada Inc. ....                                        | 217-219             |
| Mardan-Safeguard Ltée ....                                 | 223-225             |
| M.D.T. Corporation ....                                    | 708-710             |
| Médi-Dent Service ....                                     | 320-322             |
| Merck Frosst Canada Inc. ....                              | 810                 |
| Merrell Dow Pharmaceuticals ....                           | 613                 |
| Midwest ....                                               | 312-314             |
| Minolta Canada Inc. ....                                   | 1028                |
| Mo-Dent Ltée ....                                          | 808                 |
| Modudent Inc. ....                                         | 1004-1006-1008-1010 |
| Modular & Custom Cabinets Ltd. ....                        | 210-212             |
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A new individual dental care plan "Dentaide" in the Province of Québec, has recently been announced by Dr. Claude Chicoine, President of l'Association des chirurgiens dentistes du Québec (ACDQ).

It was the result of an agreement between the Québec Blue Cross and the ACDQ, and Dr. Chicoine said, it will "no doubt have a major impact on the more than two million Quebecers who have not been able to join group dental plans, for one reason or another, but who can now take out individual policies for the care they need."

These individuals can now get all the necessary information at Québec dentists' offices, and by following the dentist's recommendations, can participate in the individual plan enabling them to assume their own dental care costs without having to pay anything out of pocket for the insured portion of their treatment.

Dr. Chicoine praised the "open-minded attitude and friendly collaboration of the Québec Blue Cross, as well as its determination to associate itself with our profession to offer the public a long-awaited insurance product."

**The Dr. Lorne E. MacLachlan Endowment Fund** of the Canadian Fund for Dental Education recently received a cheque from Dr. McLachlan's estate for \$50,000.

"This donation increases the Endowment Fund to \$150,000", said Dr. Fred Reid, Chairman of CFDE's Board of Trustees.

The Endowment Fund was started by Dr. MacLachlan in 1973, with a personal donation of \$45,000. This was increased to \$100,000 in 1978. "Dr. MacLachlan directed that the annual income be shared equally by the dental schools at the Universities of Western Ontario, Toronto, McGill and Dalhousie," Dr. Reid said.

Dr. MacLachlan took his own post-graduate studies in oral surgery and prosthodontics, but his special fondness was for the field of prosthodontics, and he

gained considerable recognition for his work in the discipline.

"Naturally, Dr. MacLachlan directed that income from his Endowment be used to provide financial assistance for teacher training in Clinical Prosthodontics, Complete and Maxillo-Facial Prostheses at the four dental schools," explained Dr. Reid.

**A National Conference of Chemical Dependency** in the Dental Profession, sponsored by the Advisory Committee on Chemical Dependency Issues of the American Dental Association's Council on Dental Practice, is scheduled in Chicago on August 31 and September 1, next.

Advisory Committee Chairman Dr. William Van Dyk says this Second National Conference "is designed to facilitate the sharing of experience. State dental societies with established chemical dependency programs can help those at the beginning stages."

Participants will be allowed to take part in three of five featured workshops. Workshops will be offered on how to form a chemical dependency committee and help it mature; how to educate dental schools, boards of registration and dental examiners on the disease of chemical dependency; and how to educate families as well as peers, concerning chemical dependency.

There will also be workshops on legal, insurance and financial aid concerns for chemically dependent dentists; and the dynamics of after-care support for the recovering chemically dependent dentist.

The first such conference was held at the ADA headquarters building last year.

**The Thirteenth Edition of the Canadian Drug Identification Code** is now available.

Published by the Canadian Government Publishing Centre, the book gives extensive detail on the composition and sources of over 16,000 drug products offered for sale in Canada during 1986. Information

included in the volume encompasses items such as the name and strength of each active ingredient in the unit dose, and medicinal ingredients present in marketed drug products.

The publication is available in a bilingual format, with a soft cover for \$16.95 (Canadian). Outside Canada the price for the book is \$20.35 (Canadian).

The volume can be ordered from the Canadian Government Publishing Centre, Ottawa, Canada, K1A 0S9, and a cheque or money order must accompany the request.

**The Academy of General Dentistry (AGD)** is holding its 35th annual meeting in Seattle, Washington, July 17-22, 1987.

The meeting's theme will be "The Changing Shape of Dentistry" and will include participation courses, scientific sessions, special seminars, mini-clinics and a full family oriented social program.

One of the highlights of the meeting will be a scientific session co-sponsored by the Academy of Dentistry for the Handicapped, entitled "Patients With Disabilities — An Aging Patient Population."

For more information about the meeting, contact: AGD's Meeting Department, 211 E. Chicago Ave., Suite 1200, Chicago, Ill., 60611, USA, or call 312-440-4300.

**The first hospital-based dental clinic in the United States** for the treatment of people with AIDS and AIDS Related Complex (ARC) opened April 2, 1987 in The Spellman Centre for the Treatment of Persons with AIDS at St. Clare's Hospital in New York City.

The dental service will provide direct inpatient and outpatient care and will be involved in clinical research and education dealing with the oral manifestations of AIDS. Funding for the dental clinic is being provided by the Alfred E. Smith and the Altman Foundations.

The Spellman Centre offers a comprehen-

sive program, including an acute care unit for patients with AIDS, a full service outpatient clinic and a hotline for AIDS information.

Once again, the Royal Canadian Dental Corps Association is holding a reception, in conjunction with the joint convention of the Canadian Dental Association and Les Journées dentaires du Québec.

The reception will take place in the Grand Salon of the Hotel Méridien on May 25, 1987 from 4:00 to 6:00 p.m., in Montréal, Québec.

Spouses of those in attendance are welcome.

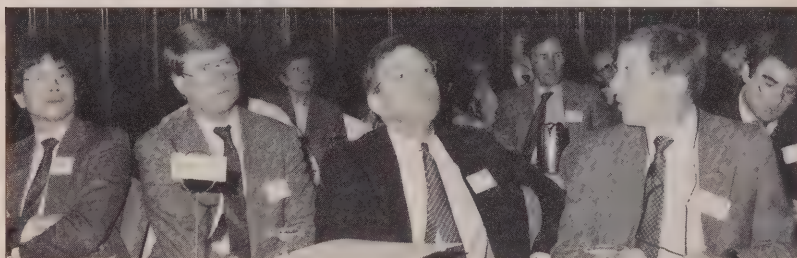
**The Faculty of Dentistry, University of Toronto** recently held a Periodontology Symposium, entitled "Antimicrobial Therapy, and Inflammatory Modulation — Prescription for the Treatment of Periodontal Disease."

Attended by more than 400 dentists, periodontists, and dental hygienists, the Symposium was sponsored by Lederle Laboratories, the Upjohn Company of Canada and Rhône-Poulenc Pharma Inc. The Director of the Symposium was Dr. Eric Freeman, Professor in the Division of Biological Sciences and Department of Periodontics at the Faculty.

Guest speakers included Drs. Richard Ellen, University of Toronto; Robert Genco, State University of New York at Buffalo,



(Left to Right) Dr. Richard Ten Cate, Dean, Faculty of Dentistry, University of Toronto; Dr. Richard Ellen, University of Toronto and Dr. Eric Freeman, also from the University of Toronto, and the Director of the Symposium.



(Left to Right) Drs. Trevor Chin Quee, Dalhousie University; Max Goodson, Forsyth Dental Centre, Boston; Ray Williams, Harvard University, Boston and Walter Loesche, University of Michigan.

Walter Loesche, University of Michigan; Trevor Chin Quee, Dalhousie University; Ray Williams, Harvard University and Max Goodson, Forsyth Dental Centre.

The photographs show some of the speakers and delegates at the Symposium.

The Journal thanks Dr. Robert Turnbull, for the information for this item.

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## GERIATRIC DENTISTRY UPDATE

### DERNIERS TITRES PARUS SUR LA DENTISTERIE GÉRIATRIQUE

1. Chow, G. *Oral surgical consideration of the aged*. Special Care in Dentistry, v. 3, no. 1, January-February 1983, pp. 17-20.
2. Cunningham, M.A., Beck, J.D. and Ettinger, R.L. *Self-assessment of competency in geriatric dentistry*. Gerontology and Geriatrics Education, v. 6, no. 1, Fall 1985, pp. 17-23.
3. Ettinger, R.L. and Beck, J.D. *Medical and psychological risk factors in the dental treatment of the elderly*. International Dental Journal, v. 33, no. 3, September 1983, pp. 292-300.
4. Franks, A.S. *Gerodontics: a challenge to dentistry*. Dental Update, v. 13, no. 5, June 1986, pp. 223-226.
5. Goldstein, R. Dr. *Ronald Goldstein: geriatric patients are ideal candidates for esthetic dentistry (interview)*. Dental Management, v. 26, no. 8, August 1986, pp. 37-42.
6. Gordon, S.R. and Jahnigen, D.W. *Oral assessment of the dentulous elderly patient*. Journal of the American Geriatrics Society, v. 34, no. 4, April 1986, pp. 276-281.
7. Kinsey, J.G. *A comparison of attitudes to geriatric dentistry in five EEC countries*. British Dental Journal, v. 161, no. 8, October 25, 1986, pp. 303-305.

8. Kress, G.C., Jr. and Vidmar, G.C. *A compendium of objectives for geriatric dentistry*. Journal of Dental Education, v. 49, no. 9, September 1985, pp. 627-635.

9. Lowenthal, U. and Mersel, A. *The elderly patient*. Oral Surgery, Oral Medicine, Oral Pathology, v. 55, no. 2, February 1983, pp. 142-144.

10. MacEntee, M.I. and others. *Oral health in a long-term care institution equipped with a dental service*. Community Dentistry and Oral Epidemiology, v. 13, no. 5, October 1985, pp. 260-263.

11. Morand, M.A. *L'endodontie gériatrique dans le contexte québécois*. Journal Dentaire du Québec, v. 23, Septembre 1986, pp. 385-391.

12. Vallée, R., Miquel, J.L. and Ferran, P. *Médecine dentaire et gérodonologie*. Journal of the Canadian Dental Association, v. 52, no. 1, January 1986, pp. 83-85.

13. Vallée, R., and others. *Étude sur la dentisterie gériatrique au Québec*. Journal Dentaire du Québec, v. 22, Juin 1985, pp. 301-308.

*One copy of the above articles is available at no charge from the library to all CDA members. Non-members will be charged \$5. This bibliography was generated with the help of MEDLARS.*

*La bibliothèque de l'ADC offre gratuitement à ses membres et pour \$5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS.*

## NEW LIBRARY ACQUISITIONS

### TITRES EN BIBLIOTHÈQUE

The following current acquisitions are available on loan from the Resource Centre/Library.

Les titres indiqués ci-dessous sont maintenant disponibles à la bibliothèque/centre de documentation de l'ADC.

1. Clark, Glenn T. and Solberg, William K., editors. *Perspectives in Temporomandibular Disorders*. Chicago: Quintessence Publishing Co., 1987. 147p. 1 copy.
2. Lucia, Victor O. *Treatment of the Edentulous Patient*. Chicago: Quintessence Publishing Co., 1986. 248p. 1 copy.
3. Mathewson, Richard J., Primosch, Robert E. and Robertson, Dean. *Fundamentals of Pediatric Dentistry*. Chicago: Quintessence Publishing Co., 1987. 435p. 1 copy.
4. Rateitschak, Klaus H. and Rateitschak, Edith M. *Color Atlas of Periodontology*. New York: Thieme, 1985. 321p. 1 copy.
5. Tamura, Katsumi. *Essentials of Dental Technology*. Chicago: Quintessence Publishing Co., 1987. 549p. 1 copy.
6. Van der Waal, Isaac and Pindborg, Jens J. *Diseases of the Tongue*. Chicago: Quintessence Publishing Co., 1986. 199p. 1 copy.
7. Wasserman, Bernard. *Root Scaling and Planing: A Fundamental Therapy*. Chicago: Quintessence Publishing Co., 1986. 160p. 1 copy.

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## PRELICENSURE COVERAGE

While reading the September 1986 issue of our Journal, I was surprised to note another four articles on the Prelicensure Conference held last February. I looked through the May to September issues and noted 17 articles/reports covering 51 pages.

I am asking why such an extensive coverage was given to the two day conference on prelicensure, at considerable expense to the membership and other scientific/clinical articles? Are all other symposium/conferences sponsored by the CDA going to receive similar exposure in the Journal? I hope not because there won't be much space left for anything else. The Journal has several functions, but surely a reasonable balance should be maintained: 51 pages is a bit much.

In future issues I suggest the publishing of conference summaries only, listing where the complete reports may be obtained for those interested and at what cost. Please consider my suggestion in a positive mood. I am a supporter of our Journal and wish it to serve the full membership. I am concerned that with the Prelicensure subject the Journal did not represent the membership, but became an outlet for a small pressure group.

Alan S. Richardson, DMD, MSc.,  
Professor,  
Dept. of Restorative Dentistry.

**EDITOR'S NOTE:** Dr. Richardson's concerns were brought before the Editorial Board, and discussed. An editorial policy regarding coverage of such CDA sponsored meetings and symposia is currently being formulated, with an eye to the possibility of reducing such coverage in the future.

## LIFE MEMBERSHIP REQUIREMENTS

Some World War II veterans are being most unfairly treated by a change of rules in qualifying for CDA Life Membership.

Up to the end of 1986, anyone reaching the age of 65 was eligible: now there is an additional requirement of forty years of practice.

A few of us are still in practice who served in World War II, but not the Dental Corps. We had to take dentistry after the war, and as a result did not graduate till 1950 or later: most of us in our late twenties, or older. Those of us who are now reaching 65, find that Life Membership is several years down the road; when we may be seventy or older.

I am sure you will agree this is most unfair. It means, in effect, that these veterans are being penalized just because their service was not in the Dental Corps.

As provincial dues are steadily increasing at a rapid rate, (often \$1,000 and more) this is certainly a hardship for men past 65; who see others the same age, — some who did not even serve in World War II, — being granted Life Membership.

I am sure if this is given the publicity it deserves, some allowance will be made for this comparatively small group of veterans involved.

W.O. Mulligan, DDS  
Saint John, New Brunswick

**Editor's Note:** Dr. Mulligan's concerns were brought to the attention of Dr. P. Ralph Crawford, Chairman of CDA's Membership Committee. Dr. Crawford in part, made this reply: "The requirements for Life Membership status have received particular attention over the past three to five years, resulting in several changes of definition. The

*final version: 'any member who has been a member of the CDA in good standing for a minimum of forty (40) years, regardless of age', would appear to be the definition that best suits the needs of most (but not all) considered factions. If you, however, can persuade your confreres who are "too proud to ask" to write me, I can assure them that their requests will be considered by the Membership Committee but, of course, I can promise no startling changes.'*

## REPLY TO McLEOD'S REBUTTAL OF "A MORAL & DENTAL DILEMMA"

I applaud Dr. McLeod for his evangelical enthusiasm for shopping mall dental centres, however it does not compensate for a somewhat weak rebuttal of the January editorial "A Moral and Dental Dilemma".

By focussing on retail dentistry, Dr. McLeod's litany discounts the studies and comments by distinguished dentists regarding an apparent decline in ethical values and an increasing cynicism among professional students.

The format of Dr. McLeod's reply is confusing. His discussion proceeds from a clearly identified initial anecdotal statement to a third opinion without any obvious second point. Has his fervent missionary zeal for store-front dentistry tempered the logical process of debate?

Dr. McLeod's argument is crucified by his parable of the Ottawa dentists. Surely the refusal, by twenty colleagues, to treat a patient in dental and pecuniary distress, is a perfect example of a desperate need to assess our present moral and ethical standards? Failure to do so may destroy our status as a self-regulating profession.

J. Hardie, BDS, MSc, FRCD(C)



## 'INNOVATORS' ANSWER

We would like to take this opportunity to thank the *Journal* for the recent article, *Innovations*, which outlined the use of televisions in our office *JCDA*, No. 6, 1986, pg. 466 "Briefly". In a sense, it has added "credibility" to our efforts, which until now, have been met with skepticism and scorn from various dental self-interest groups. Unfortunately, local and national media coverage have been labelled as "publicity stunts" resulting in negative reactions from our provincial dental association. Nevertheless, we are happy to report that our "audio-visual analgesia" has been adopted by several other progressive practices in the area.

The original concept of ceiling televisions evolved from the use of a combination of ceiling posters and portable stereo cassette players. Let us briefly describe the impact this innovation has had in our office. On a typical Saturday, "Kids only Day", we treat an average of 75-80 children without the use of nitrous oxide or premedication of any kind. Simple techniques including media distraction, painless injections via intraligamentary syringes with Ultracaine, a relaxed atmosphere, and "milk bar", allows us to get through this hectic day with very few management problems.

The adult segment of our practice has also benefited from the use of televisions as evidenced by more relaxed patients who no longer request "the gas". The grind of long procedures are more easily tolerated due to the distraction created by movies, game shows and soaps. Since we offer extended hours, patients no longer hesitate to keep appointments for fear of missing their favourite hockey or football games. Rock videos, aided by stereo headphones, are

also keeping the toes of the adolescents tapping.

However, this is but a start. The possibilities for the use of ceiling televisions are endless. In the area of patient education and oral hygiene instruction, dental awareness can be increased by the simple use of videos. Our future plans include the incorporation of video cameras chairside to allow patients closeup, instant replays of the actual dental procedures taking place. Dentistry has been witness to many advances in the last few decades. While improvements in technique are acknowledged, much of the progress can be attributed to improved materials and innovative concepts.

Conrad B. Sonntag, DDS  
Kirk A. Ewasechko, DDS  
Care Dental Centre  
Medicine Hat, AB

## RE: EDITORIAL BY DR. HARDIE: CAPITATION: GUILTY OR NOT

This editorial purports to judge whether or not there is enough evidence to make a final judgement about capitation. I would respectfully remind the Editorial Board and its Chairman that the position of our national dental association is that capitation is indeed "guilty".

The dentists of Canada have obviously come to the same conclusion during the past year. So much so in fact, that in my opinion a true capitation scheme where payment for dental services is based on a fixed amount "per capita" or per person is no longer available in this country. This sort of scheme was offered and massively rejected by the market and our profession. The result is that the various companies now

offer thinly disguised versions of capitation under various pseudonyms such as "pre-paid" or "managed" care. It would seem to me that they all have the very same faults. A badly engineered car remains a lemon even if you change its trim, its name and paint it a different colour. Obviously, both patients and dentists are not very easily duped as all these plans have interested only tiny segments of the public or profession.

Why should dentists or patients assume the insurance risk of coverage as the capitation companies readily admit they are asking us to do?

I would point out to the editorialist that the economics of dental practice are being manipulated like a shell game by some clever entrepreneurs who wish to make a profit. I haven't any problem with profits, I am a confirmed capitalist. However, in this instance there are only three economic elements that contribute to the total bill for oral health care. They are: the amount of care, that is the number of patients and the quantity of dental problems they have; secondly, there is the level of care, that is does one save the teeth and treat the patient optimally or does one put off treatment and slowly extract the teeth?; the third element is the remuneration of the dentist. One can only save money by reducing one of these three factors. There are only three shells in this game and it's easy to see where the pea is hidden — up the sleeve of the capitation companies.

Perhaps the editorial page of our national journal should not seek to stimulate debate on a subject such as capitation where a decision of guilty has already been rendered by dentists based on overwhelming evidence. What we should be talking about are the best means of protecting our professionalism and our patients' health care against this clear threat.

Bernard Dolansky, BA, DDS, MS  
President, Ontario Dental Association





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# Book Reviews

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## A COLOUR ATLAS OF AIDS — ACQUIRED IMMUNO- DEFICIENCY SYNDROME

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C.F. Farthing, S.E. Brown,  
R.C.D. Staughton, J.J. Cream  
and M. Muhlemann

---

Wolfe Medical Publications Ltd.  
Year Book Medical Publishers, Inc.  
\$39.50  
80 pages.

This text book is an attempt to provide a pictorial representation of a new disease complex. The authors must be praised for attempting this task within 80 brief pages.

Clear, colourful, and realistic photographs of numerous mucocutaneous signs combined with a few histopathologic photomicrographs and black and white diagnostic images of respiratory and neurologic tissues, have created a visual guide to the clinical manifestations of this syndrome. Multi-coloured charts, diagrams, and illustrations compliment the short written descriptions of antibody testing, and the immunologic and epidemiologic aspects of the disease. The comments and counselling of AIDS patients and the prevention of the syndrome are, of necessity, brief but succinct.

The photographs illustrating the oral manifestations of AIDS are no better than those appearing in the recently reviewed book "AIDS and the Dental Team" (J. of C.D.A. 53:1, 1987). Illustration number 147 is of a non-specific coated tongue however the angular lesions are suggestive of a candidiasis. The authors suggest that gingivitis is an almost universal finding among AIDS and ARC patients. This has not been the reviewer's experience espe-

cially among patients in the initial phases of the infection.

Considering the aim of this text book and the price of \$39.50, it is of limited value as an addition to the library of general dental practitioners. It better serves as a convenient pictorial reference for physicians and dermatologists.

Knowledge and descriptions of the acquired Immunodeficiency Syndrome continue to expand at an unrelenting rate, exemplified by the fact that although this book was published in 1986 the nomenclature used for the AIDS virus is already out of date.

*This book was reviewed by  
J. Hardie, BDS, MSc, FRCDC  
Chief, Department of Dentistry  
Ottawa Civic Hospital*

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## A TEXTBOOK OF ORAL PATHOLOGY

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W.G. Shafer, M.K. Hine,  
B.M. Levy

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W.B. Saunders Co.  
Toronto  
917 pages

The fourth edition of "A Textbook of Oral Pathology" is characterized by a modest increase in weight and a rigid adherence to the successful format and organization of previous editions. In the preface to this edition the authors acknowledge the exponential increase in the volume of literature related to the subject and it is testimony to their self discipline that the new edition is enlarged by only sixty-four pages. This includes the newly acknowledged contribution of a fourth author, Charles Tomich.

As with the previous edition the chapters

are grouped into five sections, 1. Disturbances of Development and Growth; 2. Diseases of Microbial Origin; 3. Injuries and Repair; 4. Disturbances of Metabolism; 5. Diseases of Specific Systems. Many conditions described may be more fully described in specialized but restricted texts, however the lasting appeal of this text is in its ability to describe such a wide range of conditions with clarity, brevity and a viewpoint that is specifically dental. For the interested reader key references are provided for most conditions and these are not restricted to the dental literature.

When a book covers such a variety of subjects, it is inevitable that any reviewer will have developed his or her own prejudices that will not always be reflected in the text. I believe the authors have taken this into account, particularly in lesions where past nomenclature has been confusing and current concepts are still debated, e.g. Odontogenic Fibroma.

This approach has strengths and weaknesses. It acquaints the student with evolution of opinions thereby introducing her/him to "shades of grey". It has the added attraction that the passage of time will not judge a commitment to a particular viewpoint to be in error. The price to be paid in an undergraduate text is that this approach may leave fertile ground for confusion. However the authors, on the whole, are to be congratulated for not subjugating accuracy to "clarity".

It is worthy of note that subtle changes in the descriptions of odontogenic keratocyst and lateral periodontal cyst have simplified the task of understanding the pathology of these lesions. In addition the surprising omission of dens evaginatus (Leong's premolar) in previous editions has



now been rectified. A continuing grudge is the blurring of the terms fibroma and fibrous hyperplasia and the statement that fibroma is the most common soft-tissue neoplasm of the mouth.

These small points serve to illustrate the problems in trying to be all things to all people, yet for many years that is exactly what this book has been. There is no doubt that this wide ranging and universally popular text will deservedly retain its pre-eminent position among textbooks of Oral Pathology.

*This book was reviewed by  
Dr. R.J. McComb  
University of Toronto*

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## **ORAL AND MAXILLOFACIAL SURGERY: PROCEEDINGS FROM THE 8TH INTERNATIONAL CONFERENCE ON ORAL AND MAXILLOFACIAL SURGERY**

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E. Hjorting-Hansen, editor

*Quintessence Publishing Co.  
Chicago, Ill. 1985 596 pp. illus.*

The Eighth International Conference on Oral and Maxillofacial Surgery held in Berlin in 1983 was a meeting of sufficiently high calibre to allow for the printing of two volumes of information. The first of these, which I reviewed in a previous edition of this Journal, dealt with a specific forum on the problems of the atrophic jaw. This volume, however, is a far more general text. It has been advertised as "the most comprehensive collection . . . (of) every type of oral and maxillofacial surgery with more than 200 contributions from 20 countries". The editor, Dr. E. Hjorting-Hansen, is an oral and maxillofacial surgeon and it is very apparent that this book is primarily for the practitioners of that specialty.

As one can well imagine, a conference of this magnitude examined a wide range of surgical topics and the book has attempted to categorize them into a series of major headings. The lead paper in the opening section on "Diagnosis" highlights one of our distinguished Canadian surgeons who has developed an international reputation in the diagnosis and treatment of atrophic ridges, Dr. Paul Mercier of Montreal. The rest of that section deals with diagnostic assessment of everything from "The Computer-Assisted Diagnosis of Depression in Patients with Atypical Facial Pain" to the "Circulatory Response After Oral Injection of Lidocaine with Epinephrine". Other sections, covering Maxillofacial Injuries, Orthognathic Surgery, Oral Tumours, Iatrogenic Lesions, Temperomandibular Joint,

Cleft Lip and Palate, Reconstruction and Heterogenic Transplantation reflect the ever-expanding role of MF Surgeon plays in patient care in the 80's.

Generally, the quality of the papers reproduced here is quite acceptable and does not suffer from the delay of getting into print almost three years after presentation. In fact the papers on compression-osteosynthesis in fracture and osteotomy cases is as current a subject as one will find in oral surgery today. The majority of the papers are clinical in their scope, which makes the volume all the greater an attraction to the surgeon in private practice. A short concise update on platelet function demonstrates the clinical focus on even the more esoteric topics. I found a short article on the use of intraoral artificial salivary reservoirs in the treatment of xerostomia — a fascinating concept.

Unless you are a general dental practitioner with a vast background in oral surgery or have an insatiable curiosity, this book probably holds little attraction for you. On the other hand, as any of us who attended the Ninth International Conference in Vancouver in May 1986 can attest to, the IAOMS is an organization that has blossomed beyond its adolescence into a full grown adulthood. The information that is disseminated at these meetings warrants publication and should be compulsory reading for all those who wish to maintain a broad view of the scope of surgical practice throughout the world.

*This book was reviewed by  
Dr. J.H. Gryfe,  
an oral & maxillofacial surgeon  
from Weston, Ontario.*

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## **FACIAL GROWTH AND FACIAL ORTHOPEDICS**

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Frans P.G.M. van der Linden

*Quintessence Publishing Co., Ltd., 1986  
Surrey, U.K.*

Over the past 40 years much has been written on facial growth and facial orthopedics without a serious attempt to dovetail the two topics.

Frans van der Linden begins his preface with these words: "Of significance in orthodontic training is the knowledge of facial growth and the way it can be influenced. This knowledge, together with that of the development of the dentition, forms the basis of the theory in clinical orthodontics." His aim was to set out, in a clear and concise form, such information as the dentist needs to provide responsible diagnosis, advice and where necessary, treatment.

This 225-page paperback has 11 chapters and covers over 90 topics ranging over general and facial growth and development

from the newborn to the adult, and a multiplicity of morphologic, physiologic and psychic changes. This book takes into consideration biologic ages of skeletal age, dental age, the timing of sexual maturity and the influence of genetics and environment.

The author proposes that adolescent growth be incorporated into the treatment of particular orthodontic anomalies; because of maturational differences between males and females, he believes that treatment timing can be better coordinated with facial growth and the changing dentition in females than males e.g. males have already lost the leeway space before the onset of the prepubertal growth spurt. He recommends that "pronounced orthodontic anomalies which require extensive facial-orthopedics changes demand earlier initiation of treatment than moderate malocclusions". One goal of extensive early treatment is to avoid prolonged treatment and prevent weakening of patient and parent co-operation.

As clinicians we are warned to be wary of assumptions for which we lack supportive research data e.g. correlations of tongue function and open bite are not solidly based because tongue thrust can be secondary to vertical excess of the facial skeleton. In addition, maxillary and mandibular discrepancies (and not just the lip pressure alone) may contribute to the variability of the anteroposterior position of the incisors.

The author refers to the dentoalveolar compensating mechanism as the "system which attempts to maintain normal intercusp relations under varying jaw relationship". When individual cases exhibit greater skeletal discrepancies than can be accommodated by the compensating mechanism we must then consider orthodontic therapy or a combination of orthodontics and surgery. He believes that the guiding influence of interdigitation is important in retention, because in the presence of normal function, the better the interdigitation, the more stable will be the occlusion; at the conclusion of treatment, end-to-end occlusions are likely to be least stable.

The theory of facial growth and the issue of where genetics ends and environment begins remain major issues. The author discusses the growth theories of Weinmann and Sicher, Scott, Van Limborg and Moss and although he leans towards Moss, no one is a clear winner. Generally it is agreed that, except for the cranial base, the primary force in the increase of the brain case is the growth of the brain tissue; however, is this also true in the development of the long bones of the upper and lower extremities and that of the mandible?

In his section on the limitations of facial

orthopedics, the author suggests that changes are almost routine in the dento-alveolar area; they occur to a limited extent in the mandibular condyles but no changes take place in the spheno-occipital synchondrosis. Therefore the limits of therapeutic change depend upon differences in anatomic morphology of hard and soft tissue, mode of growth, functional activities, adaptability and co-operation.

Overall the book is well organized but would be improved by making some changes in the order of the material and by supplying more references. The book is strongly recommended. It should prove to be a useful reference to students and clinicians because of its concise elaboration on most areas. The chapter on the development of the dentition and facial growth is highly detailed.

This book should give the student a better understanding of facial growth and the factors that influence facial growth. As a result he would choose facial orthopedic therapy more appropriately and the increased competence would benefit the patient and give more satisfaction to the clinician.

*This book was reviewed by Frank Popovich  
Prof. of Orthodontics University of Toronto  
Head, Burlington Growth Centre*

## LES PONTS PAPILLON

André Prévost, Pierre Hélie  
et collaborateurs

Gaëtan Morin Editeur,  
C.P. 965, Chicoutimi (Québec),  
Canada, G7H 5E8,  
39,00 \$, 129 pages

Ce volume publié en 1985 couvre de façon exhaustive tous les éléments pertinents au pont papillon: concepts fondamentaux, plan de traitement, plans d'insertion, choix des métaux, technique de laboratoire, matériaux d'empreinte, choix des pontiques, cimentation. Ce livre inclut également deux chapitres sur les attelles de contention péri-dentaire et postorthodontique. Un grand nombre de photographies en couleur illustrent les principes énoncés.

Le livre est bien écrit et facile à comprendre. Tout individu réellement intéressé à mettre en pratique la technique du pont papillon appréciera ce volume.

*La revue de ce livre a été faite par  
Pierre Desautels, DDS, MSD,  
Département de Dentisterie de restauration,  
Faculté de médecine dentaire,  
Université de Montréal.*

## FIRST AID TIP



## HEAT EXHAUSTION

Heat exhaustion is a shock-like condition caused by exposure, especially in the elderly and persons in poor physical condition • Move out of the heat; place at rest • Loosen tight clothing • Keep head low; raise feet and legs slightly • For cramps, give a glass of slightly salted, cool water to drink (add ¼ teaspoon of salt). Repeat no more than once • Watch breathing • Get medical aid.



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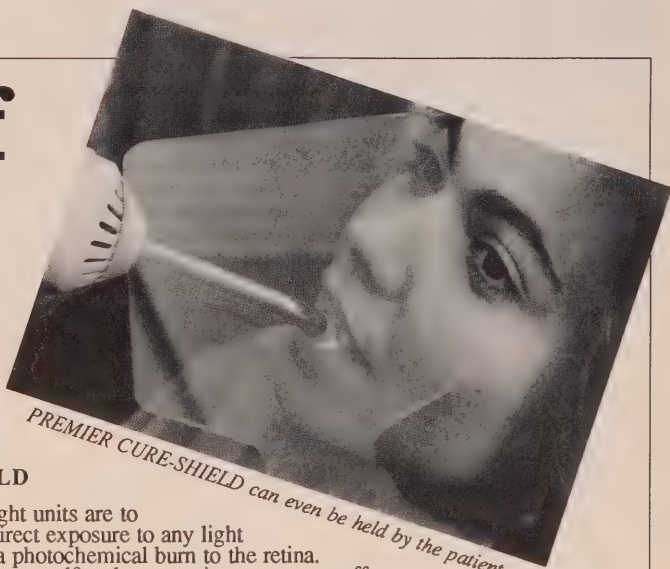
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\* 1. Clinical Research Associates Newsletter - Vol. 9, Issue 1, January 1985, 2. Clinical Research Associates Newsletter - Vol. 8, Issue 2, February, 1984, 3. Ocular Hazard of Light Sources: Review of current knowledge, Journal of Occupational Medicine, 4. U.S. Army Environmental Hygiene Agency: Standards for Use of Visible and Non-Visible Radiation on the Eye 1983.



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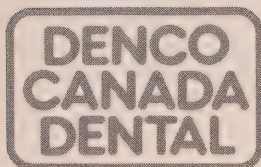
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# Specialty Features

## THE ASSOCIATION OF CANADIAN FACULTIES OF DENTISTRY TWENTY YEARS OF ACHIEVEMENT

Wesley J. Dunn

Professor, Faculty of Dentistry,  
The University of Western Ontario  
President, ACFD/AFDC, 1976-1978

**Editor's Note:** The Association of Canadian Faculties of Dentistry (ACFD) will be sharing in the celebration of the 25th Anniversary of the founding of the Faculty of Dentistry, University of British Columbia, June 18-21, 1987.

In 1957, 82 years after the founding of the first, there were five dental schools in Canada. The following decade, 1958 to 1968, witnessed the addition of five more; truly a period of remarkable growth in Canadian dental education. And it was during the early years of that decade that serious suggestions for a separate Canadian dental schools' association emerged.

From its beginnings, dental education in Canada and in the United States has closely followed parallel lines. The dental schools of both countries, even before the release of the Gies report in 1926, had co-operated through various representative organizations. The Dental Faculties Association of Canada, organized in 1920, became amalgamated three years later with the National Association of Dental Faculties and the American Institute of Dental Teachers in the new American Association of Dental Schools (AADS).<sup>1</sup> Thus, from the moment of the creation of the AADS, the Canadian Faculties were full partners within its organizational framework. In fact, as late

as 1958, the distinguished Dean of Toronto's Faculty of Dentistry, Dr. Roy G. Ellis, was President of the Association.

A common dictionary meaning of the noun 'visionary' is 'one who is impractically idealistic, a dreamer.' Well, the Association of Canadian Faculties of Dentistry/l'Association des Facultés Dentaires du Canada (ACFD/AFDC) had its visionary. But he was neither impracticable nor an unrealistic dreamer. Dr. John W. Neilson, the founding Dean of the Faculty of Dentistry of The University of Manitoba, was clearly the farsighted catalyst whose plan for a Canadian organization to represent the nation's dental schools was so enthusiastically endorsed and encouraged by his decanal colleagues.

But let's step back a little. In the early 1960s the Government of the United States was actively implementing its policies for the expansion of health personnel. A portion of this exercise was a heavy investment in the universities to assure sufficient health care manpower in the event a national health plan were to be achieved. The dental schools were included with the schools of medicine and osteopathy — known as the MOD group — and much benefit accrued from the extensive funds made available for training teachers and researchers and for very significantly increasing the number of dental students.

Understandably, the AADS, notwithstanding the membership involvement of the Canadian Faculties of Dentistry, was the principal forum for discussion and deliberation. Thus it was increasingly becoming oriented to activities bearing on U.S. federal policies and their possible consequences on the organization, operation, and development of dental education in that country. A new climate of regional interest in AADS meetings evolved and this, coupled with the rapidly increasing membership in the AADS of new U.S. dental schools, created among the Canadian members a gentle uneasiness, at least a vague sense of alienation, and a feeling that their participation in AADS activities was somewhat less productive than their expenditure of time, effort, and money should engender. Several of the Canadian Deans — through no fault whatsoever of the AADS — perceived that their role was increasingly becoming that of observers rather than performers.

Whenever they could, the Deans of the Canadian schools met together essentially to exchange information on an informal basis. It was clearly recognized that in Canada, different from the United States, as a consequence of the constitutional prerogatives discernible from *The British North America Act, 1867*, the Federal Government, notwithstanding provincial transfer



payments, did not exhibit such a dominating presence in the health care educational system. The universities were creatures of the provinces and the policies and fiscal support of provincial governments, therefore, were vital to the academic vitality of the universities and of the dental schools within them. National policies, as a consequence, were not as much at issue as was the need for better co-ordination on the part of the Canadian schools.

Concomitantly with the growing perception that the time was rapidly approaching when a Canadian association of dental schools should exist as a separate entity, the Association of Universities and Colleges of Canada (AUCC) was becoming increasingly interested in the expansion of education for health professionals and the development of schools for the health disciplines. The Association of Canadian Medical Colleges had a strong organization, closely tied to the AUCC, which was of very significant assistance to the country's medical schools. One of the motivations, therefore, for the creation of a similar organization for the dental schools was that a higher profile for dental education would thereby be achieved.

As ironic as it may seem, the ACFD/AFDC, after a two or three year gestation period, was "born" in 1967 at the Annual Meeting of the AADS in Washington, D.C. This inaugural session, in the words of Dr. Neilson, "took place in a foreign capital, during Canada's centennial year, as an adjunct to a meeting dominated by others than Canadians? Some would say that this was not an auspicious beginning while others would say that it is a classic example of the Canadian way of doing business!"<sup>2</sup>

The inaugural meeting made clear that the ACFD/AFDC would have two primary objectives: the expansion of research within the dental schools and the improvement of teaching through carefully considered objectives and better teaching methodology.<sup>3</sup> Thus the two main Committees of the Association, Research and Education, were inscribed in the original constitution.

Unquestionably, the AADS must have had some misgivings on the departure of the Canadian schools from its active membership but, characteristically, it gave its unequivocal support to the development of its Canadian counterpart. The earlier relationship had been a long, happy, and mutually beneficial one and the separation was thoroughly amicable. The fact that Canadian dental schools independently continue to benefit from their affiliate status within the AADS attests to the perpetuation of the warm, collegial relationships which have been in evidence now for over sixty years.

On March 22nd, 1967, then, in the Statler-Hilton Hotel in Washington, D.C.,

eight Canadian dental deans and six faculty colleagues met for the purpose of founding The Association of Canadian Faculties of Dentistry/l'Association des Facultés Dentaires du Canada. A grant of \$1000 from the Canadian Fund for Dental Education had permitted some informal meetings and also the inaugural meeting. Dean J.W. Neilson, University of Manitoba, served as Chairman and Dean Jean-Paul Lussier, l'Université de Montréal, as Secretary. Dr. Hamilton B.G. Robinson, the new president of the AADS, was a guest and observed that the creation of the ACFD/AFDC was a progressive development and a sign of further growth in dental education in Canada. He expressed the hope that the two associations would be able to work together to reach common goals in the two countries.

This writer had three privileges he was able to exercise at the inaugural meeting.<sup>4</sup> The first, in association with Dean Hector R. MacLean of the University of Alberta, was to propose the motion, subsequently carried, for the creation of a national association for the dental schools:

*That this assembly, the members of which officially represent the dental schools of Canada, does hereby agree, in support of the individual actions of the Councils of the Faculties of Dentistry, that an association of Canadian schools of dentistry be formed.*

The second, with the support of Dean R.G. Ellis, presented the draft of a constitution for discussion, and the third, with Dean James D. MacLean of Dalhousie University, proposed that the draft constitution as amended be adopted. Both motions enjoyed the unanimous support of the assembly.

The first Executive Council consisted of Dean Neilson as President, Professor Gilbert Parfitt of the University of British Columbia, Vice-President, Dr. A.T. Storey of the University of Toronto, Secretary-Treasurer, and Deans J-P. Lussier and W.J. Dunn as Members. Approximately one month later, in Ottawa, the first meeting of the newly-elected Executive Council was held, followed, in September of the same year, by the first regular meeting of the Delegates in the Ottawa Headquarters of the A.U.C.C. The first General Meeting of the Association took place on October 23rd and 24th, 1968 in London, Ontario in conjunction with the Official Opening of the Faculty of Dentistry of The University of Western Ontario.

From the inaugural ACFD/AFDC meeting in 1967, the Faculty of Dentistry of the University of Toronto graciously provided accommodation for the association's secretariat with Dr. Arthur T. Storey continuing to provide exemplary secretarial services until 1970 when the office was moved to the Faculty of Dentistry of Dalhousie University with Dr. Douglas V. Chaytor as Dr. Storey's competent succes-

sor. In 1973, Association headquarters was moved to the Faculty of Dentistry of the University of Alberta and Dr. George W. Meyers began a long period of dedicated service initially as Secretary-Treasurer and, shortly thereafter, as Executive Director. Dr. Meyers retired in July, 1984. The Central Office is now under the talented supervision of Mrs. Stella M. Taylor, the Executive Assistant.

The two decades which have elapsed since the founding of the ACFD/AFDC have witnessed a remarkable growth in capacity and in contribution. The House of Delegates consists of thirty-nine members, the Executive Council of seven, and the Education and Research Committees have six each. There are three sections — Auxiliary Educators, Curriculum Co-ordinators, and Clinic Co-ordinators — and each Faculty has a Local Committee. The activities of the association fall to five main categories: sharing of a broad spectrum of information among Faculties, stimulating educational and research curiosity, representing Canadian Faculties within other organizations both dental and beyond, developing national policy recommendations, and assisting individual faculty members.

That the ACFD/AFDC has played a significant role in Canadian dentistry over the past twenty years is unarguable. That it has an increasingly important mission to discharge in the years which lie ahead is equally unsailable. The challenges for dentistry are prodigious and the Canadian dental schools, acting in concert within their national organization, have a vital role to play in their contribution to meet them.

*We are always looking to the future; the present does not satisfy us. Our ideal, whatever it may be, lies further on.*

Gillett

## Acknowledgements

Without the leadership of two distinguished Deans — Dr. John W. Neilson and Dr. Jean-Paul Lussier — the establishment of the Association of Canadian Faculties of Dentistry would, at best, have been very significantly retarded. The author expresses his thanks and appreciation to these respected colleagues not only for their effectively-creative efforts but for sharing with him their personal recollections of the genesis of this organization.

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References: **1.** LAMSTER I, et al.: Clin. Prev. Dent., 6:12 (1983). **2.** MENAKER, L. et al.: Ala. J. Med. Sci., 16:71 (1979). **3.** ROSS, N.M., et al. Warner-Lambert research report #955-0875 (1976). **4.** YANKELL, S.L., et al.: Warner-Lambert research report #955-0893 (1976).

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# Specialty Features

## FOUR SYMPOSIA TO BE PRESENTED FOR UBC 25TH ANNIVERSARY

**Editor's Note:** From June 19 to June 21, 1987, as part of the celebration of the founding of the Faculty of Dentistry at the University of British Columbia 25 years ago, four scientific/clinical symposia will be held. Abstracts of the papers to be presented at the Symposia are presented here for the information of our readers.

### **SYMPOSIUM I: BIOCOMPATIBLE IMPLANTS: JUNE 19 - 9:00 AM TO 12 NOON.**

#### **Tissue Integrated Prostheses in Oral and Maxillofacial Reconstruction**

*P-I Brånemark, MD, PhD  
The Institute for Applied Biotechnology,  
Gothenborg, Sweden.*

#### **Abstract**

Prosthetic rehabilitation in oral and maxillofacial defects ranging from single tooth replacement via complete edentulism and severe resorption of the jaw bone to major hard and soft tissue defects after tumour surgery have as a common denominator the requirement on stable attachment to adjacent tissue. Problems and possibilities related to permanent incorporation of synthetic components in the craniofacial skeleton with mucosa or skin-penetrating devices providing attachment to the prosthesis will be discussed.

The procedure of osseointegration, which now has more than twenty years of clinical background will be used to describe biolog-

ical and technical factors, which influence short and long term prognosis.

Present possibilities for tissue integrated devices in prosthetic rehabilitation will be demonstrated, clinical long term results reported and probable future development discussed.

Biologic and economic cost benefit considerations will be used as a reference for comments on criteria for patient selection and organization of treatment.

#### **Time Lapse Cinemicrographic Studies of Cell Migration on Grooved Titanium Substrata**

*D.M. Brunette, PhD, Dept. of Oral Biology,  
University of British Columbia*

#### **Abstract**

The migration of epithelium down the roots of natural teeth and dental implants has been regarded as a contributing factor to tooth or implant loss. The direction of cell migration, however, can be controlled by the shape of the substratum to which the cells are attached. Micromachining, a process developed for the fabrication of micro-electronic components, was used to produce surfaces with grooves of precisely defined shape, depth, and width. The surfaces were coated with titanium and used as substrata for the growth of epithelial cells as well as fibroblasts from human gingiva or porcine periodontal ligament. Cells could be observed clearly on these surfaces using reflected differential interference contrast optics, and time lapse movies of cells migrating on the substrata recorded. It was found that even grooves as small as 0.5  $\mu\text{m}$  deep and 5  $\mu\text{m}$  wide were capable of directing epithelial and fibroblast migration. Cells whose locomotion has been directed by one set of grooves could be redirected by placing another set of grooves at right angles to the first. Rather than being absolute

barriers, the grooves appear to act by increasing the probability of migration in the direction of the grooves. The mechanism whereby cellular migration is directed is obscure, but is probably related to how the grooves influence the cytoskeleton and cell adhesion. These results suggest that it may be possible to place grooves on implant or root surfaces which will inhibit cell migration in an apical direction and not significantly increase plaque accumulation relative to implants with conventional surfaces.

#### **Periodontal Aspects of Dental Implants**

*Timothy Gould, BDS, LDSRCS, Dip.  
Periodont, PhD, MRCD(C). Department  
of Clinical Dental Sciences, Faculty of  
Dentistry, University of British Columbia.*

#### **Abstract**

A large number of dental implant designs have been utilized in the past in an attempt to replace teeth lost through accident or disease, and these have achieved varying degrees of success. Despite the clinical promise of the newer tissue-integrated types of implant, none has yet been able to duplicate the support and attachment mechanism of the human tooth, whose periodontal ligament provides both a shock absorbing and proprioceptive function. As well, it is not clear whether a prerequisite of a successful implant is that an epithelial attachment be present at the neck of an implant as it enters the mouth similar to the way that the gingival epithelial attachment to the tooth seals and protects the underlying bone and connective tissue from the relatively hostile environment of the mouth. The mechanism of failure of dental implants often parallels that seen in the progression of periodontal disease around natural teeth, with down-growth of the epithelial attachment, formation of periodontal pockets and loss of the supporting bone.



In the past, routine clinical parameters such as pocket depth and bleeding on probing have been useful in monitoring peri-implant health. However, newer implant techniques such as the Branemark system rely for their success on the establishment of what is in effect an ankylosis between the implant and the bone and this may bring in to question the usefulness of such parameters when trying to determine the clinical success of such implants. It also suggests that different clinical criteria may need to be adopted in the future.

## Clinical Experiences with Tissueintegrated Implants

Thomas D. Taylor, D D S, M S D,  
Director, Maxillofacial Prosthetics Clinic,  
School of Dentistry, University of  
Washington, Seattle, Washington.

### Abstract

The osseointegrated implant technique developed by Professor Brånemark is now in use around the world. A unique aspect of this Swedish system is the meticulous follow-up and documentation of virtually every implant fixture placed since 1965. This presentation will include the most recent statistics available regarding the osseointegrated implant system. Particular attention will be placed on longitudinal survival, failure and clinical significance of the numbers presented.

## Implant Stabilization by Tissue Ingrowth

Robert M. Pilliar, BASc, PhD, Centre for  
Biomedical, Faculty of Dentistry, University  
of Toronto.

### Abstract

The initial mechanical stability of an implant relative to host bone is recognized as an extremely important influence on the development of the long term implant support structure. Thus, initial rigid fixation of an implant in bone can result in so called osseointegration while a 'softer' initial fit with associated relative movement at the implant/bone junction can lead to the development of an extensive fibrous connective tissue interface zone. We have identified an effect of implant topology on the nature of the tissue that forms at this interface under conditions in which small movement occurs at the implant-bone junction as a result of early implant loading.

In our studies, endosseous endodontic implants were placed in mandibular canine teeth so that the implants were securely cemented to the tooth within the root canal region while a significant transapical portion of the implant was positioned within alveolar bone. Thus the implants moved

with the tooth during occlusal loading resulting in small relative movements at the implant/bone interface. Implants with a threaded and porous surface topography were compared. The animals loaded the implants within days of their placement. The results of push-out testing and histological examination showed that while progressive thickening of an encapsulating fibrous tissue layer resulted in loosening of the threaded implant design, the porous-surfaced implants became more strongly fixed with time as a result of bone ingrowth. These findings could be significant for defining an endosseous dental implant system that would become rigidly fixed despite early function.

## SYMPOSIUM II: DENTAL RESEARCH IN CANADA: JUNE 19: 2:00 TO 3:30

### Current Status of Dental Research in Canada

John B. Macdonald, DDS, PhD, Drug  
Addiction Foundation, Toronto.

### Abstract

Organized research in Canadian dental schools began about 40 years ago with the establishment by the National Research Council of an Associate Committee on Dental Research. By 1984 total grant support (from all sources) exceeded \$7.5 million and total faculty engaged in research numbered about 140. The quality of Canadian dental research in several fields is very high. Canadian dental researchers, although relatively few in number, are making outstanding contributions to dental and biomedical knowledge.

Nevertheless, significant problems exist for dental research in Canada: 1) Research activity is very unevenly distributed. Half the schools account for 84 per cent of the total operating grant support. Funding for the smallest research program is 2 per cent of the funding for the largest. 2) A very small proportion of research is clinical in nature. In 1984 only 11 of 49 MRC awards were for clinical research, although full-time clinical staff outnumbered basic science staff 3 to 1. 3) Inadequate arrangements exist for the training of researchers (especially clinician-researchers) for Canada's dental schools. 4) The dental schools often have little if any influence on the selection of faculty for basic science departments.

Recommendations to solve these problems include: 1) the establishment of a national training program to produce researchers, including clinical specialists with PhD-level academic qualifications; 2) guaranteed time free of competing obligations for funded researchers; 3) establish-

ment in each school of a \$100,000 research development fund as an aid to recruitment and initiation of research; 4) participation by the dental school in the selection of basic science teachers.

## SYMPOSIUM III: BIOLOGICAL DISEASE INDICATORS: JUNE 20: 9:00 AM TO 12 NOON

### The Microbial Etiology of Caries and Periodontal Disease

Barry McBride, PhD, Departments of  
Microbiology and Oral Biology, University  
of British Columbia.

### Abstract

It has long been recognized that bacteria accumulating on the teeth and in the gingival sulcus have been responsible for initiation and the subsequent development of caries and periodontal disease. The most commonly held belief was that these were non-specific bacterial diseases which were the consequence of an overgrowth of non-defined plaque bacteria. Recently, however, we have come to the realization that there are a restricted number of specific odontopathic and periodontopathic organisms. This finding has important implications for the control and treatment of oral disease. Identification of pathogenic organisms creates the opportunity to identify risk groups, to monitor the effectiveness of antimicrobial therapy and to identify active site lesions. The purpose of this paper will be to discuss what is known about the specific microbial flora associated with dental caries and the various forms of periodontal disease. Results from both laboratory and clinical studies will be assessed.

### Microbial Assessment of Caries

Bo Krasse, DDS, Odont Dr, Department  
of Cariology, University of Gotenberg,  
Gotenberg, Sweden.

### Abstract

Microbiological examinations can be used for assessment of the caries risk both in group studies and in the individual case. The microorganisms which generally are examined are mutans streptococci and lactobacilli. Different sampling methods have to be employed depending on the objectives of the microbiological examination.

In group studies persons with different risk to develop dental caries can be selected on the basis of a microbiological examination. This has different advantages. In clinical trials persons not likely to develop dental caries can be excluded and this can reduce the cost of the trial. This possibility is of great importance with the decline in the

increment rate in school children. The effect of preventive measures directed against cariogenic microorganisms can be monitored and necessary information can be obtained in a much shorter period of time than when only clinical examinations are used.

In the individual case microbiological examinations can be used as a supplement to history and clinical examination in the diagnosis, treatment and prevention of dental caries. Patients at a high risk to dental caries can be identified before a large number of carious lesions have developed. The effectiveness of caries preventive measures can objectively be assessed.

Microbiological methods are already available which can be used at the dental chair but it can be anticipated that better and more accurate methods will be developed in the near future. The use of such methods in epidemiological and clinical studies could lead to increased knowledge about the pathogenesis of dental caries.

## Microbial and Biochemical Assessment of Periodontal Disease

Walter J. Loesche, DMD, PhD, School of Dentistry, University of Michigan, Ann Arbor, Michigan, U.S.A.

### Abstract

Approximately 200 to 300 bacterial species are estimated to colonize the dental plaques of humans, but only a finite number of these species have been associated with either dental caries or periodontal disease. The identification of odontopathic species such as *Streptococcus mutans* and lactobacilli in dental caries and spirochetes, black pigmented bacteroides, *Bacteroides forsythus* and *Hemophilus actinomycetemcomitans* in periodontal disease becomes then, the departure point upon which either preventive and/or therapeutic strategies, and/or tactics are to be based.

The periodontal pathogens are a difficult bacteria to cultivate, and while they can be routinely identified in most research laboratories, this technology is expensive and difficult to transfer to the clinic setting. This has prompted alternative means of identifying these organisms in plaque, either using highly specific antibodies (either polyclonal or monoclonal) which can be used to detect these organisms in plaque samples, or DNA probes which can recognize very small numbers of the sought after microbes in the plaque, or the detection of certain enzyme activities which are characteristic of one or more periodontopathogens.

One such enzyme that has the ability to hydrolyze the synthetic trypsin substrate benzoyl-DL-arginine-2-naphthylamide

(BANA), is possessed by *Treponema dentitcola*, a small spirochete; *Bacteroides gingivalis*, the most virulent of the black pigmented bacteroides; and *Bacteroides forsythus*, an organism associated with progressive lesions. Thus, this enzyme activity would seem to be a marker for all three periodontopathogens and offers a simple means of detecting one or all of these species in the plaque. Indeed, BANA hydrolytic activity can be measured in plaque and can be associated with periodontal disease. The BANA positive subgingival plaques averaged 43 per cent spirochetes and usually came from sites with probing depths of 7 mm or more. The BANA negative plaques averaged about 8 per cent spirochetes and usually were from probing sites of 4 mm or less. Periodontal treatment was able to convert plaques from BANA positive to BANA negative. These data indicate that the ability of subgingival plaque to hydrolyze BANA is a reliable marker for the presence of high proportions of spirochetes in the plaque sample, and possibly could be used clinically to both identify sites and/or individuals who might require treatment and to monitor the efficacy of this treatment.

## Immunological Assessment of Periodontal Disease

Douglas Waterfield, Fildr, Department of Oral Biology, University of British Columbia.

### Abstract

Over the past two decades there has been a marked increase in our knowledge of the role that host responses play in the pathogenesis of periodontal infections. It has become clear that the etiology of periodontal disease is bacterial. Host immune responses to bacterial invasion play both a protective role and a destructive role in such conditions as gingivitis, periodontitis, periodontosis and acute necrotizing ulcerative gingivitis. As a general rule when the initiating agent is rapidly cleared from the area of infection, the inflammatory response is protective. However, if the initiating agent persists, the inflammatory response is excessive resulting in destruction of the connective tissues and alveolar bone. Host responses in periodontal disease can be divided into several stages; a. bacterial colonization, b. bacterial invasion, and c. tissue destruction. In the first instance secretory IgA and gingival fluid antibodies function by limiting adherence of bacteria. Once dental plaque has been established activation of complement occurs in the gingival sulcus and leads to the production of chemotactic factors attracting polymorphonuclear leukocytes. Both phagocytosis and bactericidal activity of these cells together with the antibody and complement protect against bacterial penetration of the gingiva. In the gingiva itself

antigen activated B lymphocytes produce immunoglobulins that can function in types I through III hypersensitivity reactions. Similarly activated T lymphocytes secrete lymphokines involved in immunoregulation and lymphopoiesis as well as being directly responsible for cellular cytotoxicity. Activated macrophages also produce cytokines such as IL 1 (osteoclast activating factor), prostaglandins, hydrolytic enzymes, collagenase, and plasminogen activator that destroy connective tissue and alveolar bone. The evaluation of these responses will help us to elucidate both cellular and immunoregulatory interactions in the diseased tissue leading to a better understanding of the genesis of periodontal disease.

## Chemical Assessment of Periodontal Disease

Joseph J. Tonzetich, PhD, Department of Oral Biology, Faculty of Dentistry, The University of British Columbia.

### Abstract

Bacterial plaques initiate complex series of inflammatory reactions which lead to extensive destruction of collagen and other tooth supporting tissues. The disease is believed to be an episodic infection characterized by a more intense oral malodour which has been ascribed to the presence of volatile sulphur compounds (VSC). Hence this presentation examines whether the VSC of mouth and crevicular air, and hydroxyproline (HYP) content of crevicular fluid (CF) are reliable indicators of active periodontal disease.

It has been found that VSC content of mouth air is elevated in periodontal cases and that it can be substantially reduced by corrective periodontal therapy (curettage, surgery). Furthermore it has been found that VSC emitted from diseased crevicular sites differs from mouth air with respect to concentrations and types of VSC. Whereas H<sub>2</sub>S is the dominant component emitted from  $\leq 4$  mm deep pockets, CH<sub>3</sub>SH is consistently found, and occasionally exceeds H<sub>2</sub>S levels, at deeper sites.

The CF from diseased sites exhibits significantly greater amounts of HYP which occurs almost entirely in a peptide form. This implies that it is probably derived from degraded collagen. The HYP content of CF does not correlate with either pocket depth or fluid volume, but tends to reflect and predict the changes in the epithelial attachment level. These very promising findings suggest that VSC, HYP, and possibly other yet to be identified by-products of protein degradation, may serve as predictors and indicators of disease activity.

(Supported by MRC of Canada, Grant MT-3589 and BCHCRF Grant 84(86-2).)



**SYMPOSIUM IV: IMAGING IN  
RESEARCH AND PRACTICE:  
JUNE 21: 9:00 AM TO  
12:00 NOON**

**Imaging Prenatal Growth and  
Development**

*Virginia M. Diewert, DDS, MSc, Professor,  
Division of Orthodontics, Department of  
Clinical Dental Sciences, University of  
British Columbia.*

**Abstract**

Formation of the human primary palate at six weeks and the secondary palate at 8 weeks are critical events in craniofacial development. Failure of palatal closure during this early time when crown-rump length is 12 to 30 mm, results in cleft lip and cleft palate malformations. Although it is known that extensive changes in form (both size and shape) occur during this period, little is known about the major growth changes associated with normal and abnormal palatal formation. The purpose of studies in my laboratory has been to analyze photographs and histologic sections of human embryos at progressive stages in craniofacial formation in order to identify and quantify major patterns of change. In addition to morphometric analyses of samples, a histological image analysis system has been developed for visualizing and measuring growth changes in the developing craniofacial complex. The imaging system consists of a routine for computer generated three-dimensional images of craniofacial anatomy and a finite element modelling program for measuring growth change. Evaluation of sections at anatomically comparable levels showed that extensive changes in size and shape of facial components occurred during this period. The time of primary palatal formation coincided with the time that the maxillary processes grew forward to contact the medial nasal processes. Head width increased but nasal cavity width decreased and the nasal pits became medially positioned. Simultaneously, the nasal septum became longer and narrower, and the forebrain lifted away from the thorax. During secondary palate formation, the head position continued to lift away from the thorax and the lower facial region became prominent. Rapid anteroposterior growth of the face was found to be associated with directional growth of the chondrocranial cartilages. In the mandible, Meckel's cartilage provided structural growth support prior to formation of the condylar articulation. The results of these studies have identified normal growth events during early craniofacial morphogenesis which when disrupted, can cause malformations.

*Support: Grant MT-4543 from the Medical  
Research Council of Canada and Grant  
65-4255 from B.C. Health Care Research  
Foundation.*

**Mathematical Modeling and  
Prediction of Growth on  
Craniofacial Form**

*Robert E. Moyers, DDS, PhD, Center  
for Human Growth and Development,  
The University of Michigan, Ann Arbor,  
Michigan.*

**Abstract**

A model is a simplified representation of a structure or process used heuristically or descriptively. Models are analogs, useful only to the extent that they are good analogs. In research on craniofacial morphology and growth, a variety of modeling techniques have been used including, static (paper and pencil) models, mathematical models, surrogate (substitute system) models and computer models or simulations. Biological models generally are of two classes, analogy or homology. The latter is uniquely biological since it reflects evolution and the genetic fixing of historical events into DNA sequences. Modeling by analogy is also used in biology but, for example, though the snout of some species is analogous to the upper jaw in man, it often provides poor analog models for understanding human jaw function or growth.

Developmental morphology has long been subjected to mathematical treatment. In recent years the power of the computer to facilitate pattern recognition among large numbers of objects has been utilized in many ways which have advanced our understanding of variability in craniofacial morphology, differential growth of the craniofacial region and has provoked numerous attempts at prediction of growth and future morphology.

True growth prediction of the human craniofacial form would have to emphasize quantitation, be based on sound biologic theory, and include such aspects of future growth and morphology as vectors of growth, changes in vectors of growth, future relationships of parts, future size, the onset of expected developmental events, the rates of future growth of different regions, the cessation of expected future developmental events, etc. This paper will review our progress in this area.

If mathematical modeling is precise enough, it can increase the effectiveness and design of experiments by defining their focus more precisely and the identification of key variables to be observed. We will also discuss the interrelationships of computer-based mathematical modeling of human craniofacial growth and laboratory-based animal experimentation.

**Magnetic Resonance Imaging of  
Muscles for a Biomechanical  
Model of the Jaw**

*William W. Wood, BSc, DDS, FRCD(C),  
Department of Clinical Dental Sciences,  
University of British Columbia.*

**Abstract**

Biomechanical models of the forces acting on the human teeth and temporomandibular joints require real data for testing. The force-generating components are the muscles and, until recently, knowledge of their size and spatial orientation has been limited to cadaver dissections and single slice CT scans. MRI allows three-dimensional computer reconstruction of the muscles of mastication so that the cross-sectional area, angulation and spatial orientation of the muscles in relation to the teeth and temporomandibular joints may be measured without endangering the subject.

Sixteen axial and sixteen coronal slices were obtained from 24 volunteer subjects who were selected for differences in craniofacial form. The outlines of the structures to be reconstructed were traced, coded, digitized, and with the use of graphics software, the key variables were measured.

To aid the location of relevant hard tissue points, a lateral cephalometric radiograph and working cusp contacts of dental casts were super-imposed on the MRI data.

The biomechanical contributions of masseter and medial pterygoid muscles to joint and tooth force were calculated using static equilibrium theory. In addition, the true cross-sectional areas of the muscles were calculated. The relevance of these data to the understanding of stomatographic function will be demonstrated in terms of the tooth and joint forces in three dimensions.

**Advances in PET and Recent  
Medical Research**

*Brian D. Pate, PhD, Director, University of  
British Columbia, TRIUMF Program,  
Vancouver.*

**Abstract**

Positron Emission Tomography (PET) is a technique for measuring the biochemical process occurring in the organs of an alert and comfortable human subject. The UBC/TRIUMF PET Program focuses upon brain research, and studies the disturbed physiology which characterizes dementia (especially Alzheimer's disease), movement disorders (especially Parkinson's disease, Huntington's disease and dystonia) and the treatment of brain tumors by negative pion irradiation. The technique requires the synthesis of complex tracer substances labelled with positron-emitting radioactivity. The

TRIUMF project provides the facilities for this process, as well as the design and construction of the PET cameras required for *in-vivo* measurements. In Alzheimer's disease, PET measurements of regional glucose metabolism in the brain have been found to correlate with neuronal degeneration observed by a postmortem microscopic examination of brain tissue. In Parkinson's disease, PET has been used to study the metabolism of 6-fluorodopa, related to the synthesis of dopamine neurotransmitter. Substantial reductions in uptake of 6-fluorodopa in the striatum have been observed in idiopathic Parkinson's disease, and also in models of the disease induced by ingestion of the neurotoxin MPTP. Studies of the subjects from the native population of Guam suffering from a Parkinson's-dementia-ALS complex provide data relevant to a possible environmental origin for idiopathic Parkinson's disease. Such research is expected to lead to treatment of the above disease conditions, as well as the application of PET techniques in a diagnostic setting. This work is supported by the Medical Research Council of Canada.

### Three-Dimensional Reconstructions of Tongue and Airway

Alan A. Lowe, DMD, PhD, FRCD(C),  
Department of Clinical Dental Sciences,  
University of British Columbia.

#### Abstract

A recent analysis of adult male subjects with moderate to severe obstructive sleep apnea has provided further knowledge with regard to the control of tongue posture. A cephalometric appraisal revealed several alterations in craniofacial form which included a posteriorly-placed maxilla and mandible, a steep mandibular plane and a high upper and lower face height in association with soft tissue variables of a long tongue and a posteriorly-placed pharyngeal wall. The documentation of a multifactorial skeletal abnormality in sleep apnea patients has challenged a previous concept that these subjects reveal primarily a mandibular deficiency. In addition, three-dimensional reconstructions of tongue and airway based on CT data have been developed to visualize the geometric relationships between the two structures. The cross-sectional area of specific sites of airway constriction, surface area, volume and ratio calculations were completed. The majority of the constrictions occurred in the oropharynx but six subjects had two constrictions — one in the oropharynx and one in the hypopharynx. To determine the structural relationships between airway and tongue variables, a series of logarithmic plots were determined.

An isometric relationship was quantified between tongue surface area and tongue volume. A logarithmic plot of oropharyngeal airway vs. tongue volume revealed a negative allometric relationship — tongue volume increased more rapidly than airway volume in subjects with obstructive sleep apnea. Subjects with large tongue volumes experienced significant complications at the time of surgery. Current studies involve an MRI analysis of adult control patients to determine similar volume and surface area measurements.

*Grant MA-3849 from the Medical Research Council of Canada.*

### Imaging and Diagnosis of the Temporomandibular Joint

Colin Price, BDS, FDSRCS, MDS, FRCD(C),  
Department of Oral Medicine  
and Surgical Sciences, University of British Columbia.

#### Abstract

Conventional radiography has featured heavily in the investigation of the temporomandibular joint for many decades. However, there is a regrettable lack of correlation between clinical signs and symptoms and radiological evidence of disease. Conventional radiographs do not image the soft tissue components of the joint. Arthrography has been accepted, during the last ten years, as a means of demonstrating the two compartments of the joint and the disc which separates them, by the injection of a radiopaque contrast medium. Computed tomography has also been used to image the temporomandibular joint.

Magnetic Resonance Imaging has become a clinical reality in the last five years. Images are produced using magnetic fields and radiofrequency waves. No ionizing radiation is involved. We were fortunate at UBC to acquire the first MRI unit in Canada. Preliminary studies of the temporomandibular joint started in 1984.

With MRI, bone and teeth form virtually no signal and show up as black areas. Soft tissues generally image in various shades of brightness depending on their fat and water content. The disc of the temporomandibular joint, being dense collagen, gives little or no signal, but can be observed because of the contrast with the adjacent soft tissues.

It has been possible to study cadaver material, asymptomatic volunteers and patients with signs and symptoms of internal derangements of the joints. As MRI becomes more widely available as a clinical service, it will provide much information about the temporomandibular joint.

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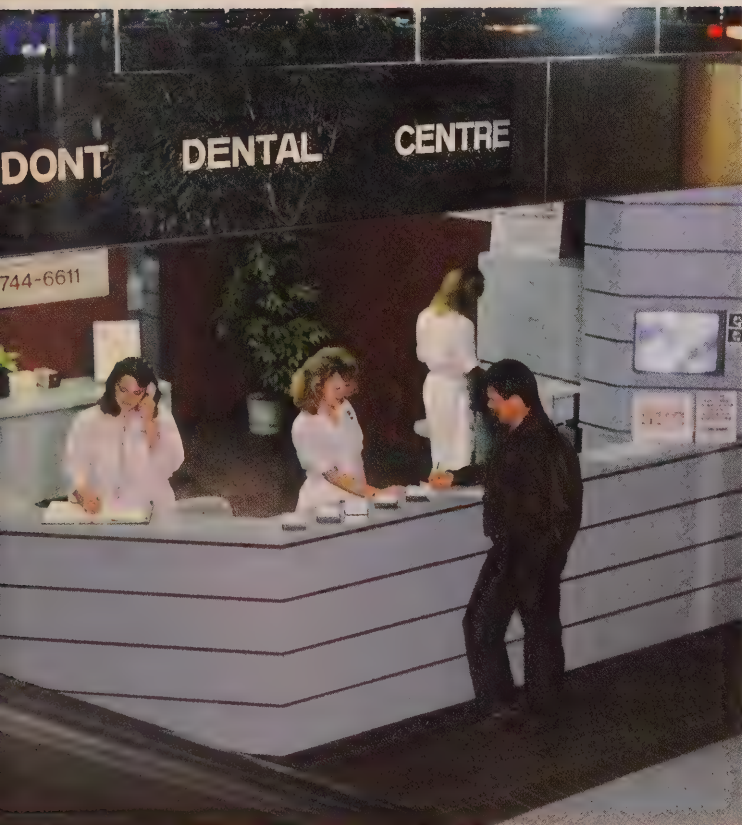
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## PROCEEDINGS: NATIONAL TEACHING CONFERENCE IN PERIODONTOLOGY

**T**he following summation of the Proceedings of the National Teaching Conference in Periodontology, which took place in Montreal, contains some thought provoking suggestions on the current periodontal curriculum in Canadian dental schools, and some information which could be of use to the general practitioner. The conclusions in this presentation, which was prepared and edited by Drs. Trevor Chin Quee and Dr. Scott Pashley, from a series of presentations made during an annual meeting of the Canadian Academy of Periodontics, are concrete suggestions for improving the periodontics curriculum to meet the changing needs of the Canadian population.

Later in this issue, and continuing in the June issue of the Journal, are papers presented at the CDA Teaching Conference in Halifax, in 1986, entitled "Periodontics and the Dental Curriculum" which look at the dental curriculum from a less specific, but equally important viewpoint. Both Conferences, the National Conference and the CDA Teaching Conference, stress the need to improve the clinical aspects of the periodontal curriculum to meet not only the changing needs of the population, but to respond to current research and allow the dental profession to give patients the latest and the best care possible.

Participants in the National Conference were: Drs. C.A. Bain, Chairman of the CDA Teaching Conference; S.M. Borden; R.G. Caffesse; G.A. Drennan; T. Gould; E.J. Hannigan; R.F. Harvey; A.F. Marcil; R.D. Oles; S. Roy; P.D. Schuller; J.E. Speck; J. Stakiw; J. Turgeon and C. Williams. The National Conference sought to address the following topics: (1) Undergraduate clinical requirements and methods of student evaluation; (2) What should be taught in undergraduate periodontics and where should the emphasis be placed; (3) Development and maintenance of enthusiasm in both the students and part-time periodontal faculty; and (4) are our graduating students really capable of recognizing periodontal disease.

### **1) Undergraduate clinical requirements and methods of student evaluation**

Two divergent methods of student evaluation were presented. The first paper, given by Dr. Turgeon from the University of Montreal, described a self-pacing system which has been in use in the third year since 1974. All students are required to complete six major objectives:

1) Improve oral hygiene index on at least five different occasions.

2) Assist in two surgeries.

3) Collect clinical data, diagnose and complete preliminary treatment planning in at least four patients.

4) Scale and root plane at least four patients.

5) Occlusal analysis and treatment planning for occlusal equilibration on at least four patients.

6) Re-evaluation and final treatment planning.

On completion of each objective, the clinical instructor makes a formative evaluation of each student's performance. If satisfactory, the student proceeds to another objective. After completion of each objective for a required number of times the student may elect to be examined on his final case provided he is judged to be "ready" by his instructor. This examination is called a summative evaluation and the student either passes or fails. If he fails or is judged "not ready", then the student can continue his training until successful in the examination. Once successful he passes on to another objective. On completion of all objectives for the required number of times, the students receive a basic grade of 60 per cent. They can increase their grade by doing more of the same or by completing other forms of periodontal therapy. At the end of



the year, a student is graded above 60 per cent according to the quantity of procedures he/she has mastered. This grading is done by the director of the periodontal clinic and not by the teaching staff.

Advantages of this system are:

- 1) It provides a proper environment for learning since it is well liked by both students and instructors. The latter are relieved of pressures of grading students and spend less than 10 per cent of their time on evaluation of competency examinations.
- 2) It takes account of individual differences between students and allows them to pace themselves.
- 3) Early recognition of student with difficulties.
- 4) No student failed.
- 5) Quality of work assured.
- 6) Emphasis on interest.

Both Dr. P. Schuller (University of Alberta) and Dr. C. Bain (Dalhousie University), presented papers on the Criteria Referenced Evaluation system in use at these dental schools. Under this system, procedures are broken down into components with specific performance criteria defined for each. The performance of each component is assessed using an evaluation checklist. In grading students some components, considered to be more important, received a weighted score. (The greater the number of possible scores the more reliable the grade.) The grades are applied for computer analysis with individual student printouts being readily available. Ideal performance criteria as described by McKenzie should have the following features: They should be

- 1) specified in clear unambiguous language.
- 2) directly related to goals of the procedure.
- 3) stated in measurable terms of sight or touch.
- 4) directly related to one of the instructional objectives of the course.
- 5) appropriately precise without being clumsy to use.
- 6) easily employed by clinical instructors.
- 7) facilitate instructional decisions.

Some benefits of this system are:

- 1) It provides an objective method for evaluating students, greatly reducing examiner bias.
- 2) Both students and instructors are familiar with the performance level necessary to obtain a passing grade.
- 3) Students receive immediate feedback during evaluation.
- 4) The students know from the computer printout, their standing at all times.
- 5) It provides solid, objective documentation in cases where students decide to challenge the grade.

Some drawbacks of this system are:

- 1) It generates considerable paperwork.

2) Instructors have to be standardized. Despite standardization of examiners, however, there still remains a certain amount of inconsistency. Some are reluctant to give a failing grade.

3) Too much time is spent by instructors evaluating instead of teaching.

4) Students tend to focus more on evaluation than on patient management.

## **II. What should be taught in undergraduate periodontics and where should emphasis be placed?**

### **A. Disease control (Dr. S. Borden — University of Manitoba)**

Because of the decreasing prevalence of dental caries, future dentists will spend more time scaling and root planing. The University of Manitoba, which previously concentrated on teaching of periodontal surgical procedures to undergraduate students, is now shifting its emphasis to the teaching of bacterial control of periodontal disease by improved initial therapy. Changes made in the undergraduate curriculum to accomplish this are as follows:

- 1) The appointment of a Dental Hygienist educator responsible for revision of the sanitative aspects of the periodontal program.
- 2) The teaching of periodontics from the first year. Students spend a half-day per week in a pre-clinical laboratory learning periodontal armamentarium and instrumentation. In addition, they spend a half-day per week in the clinic learning oral-physiotherapy techniques.

The objectives of the pre-clinical laboratory are:

- 1) Familiarization with periodontal armamentarium.
- 2) Proper periodontal instrumentation. Root planing is done under a stereomicroscope in order to show the students the results of proper and improper instrumentation on the root surface.
- 3) Detection and removal of supra- and subgingival calculus on a typodont model.
- 4) Identification of dull instruments and utilization of correct sharpening techniques.
- 5) To compare and contrast the effects of scaling and root planing.
- 6) Improvement of the tactile sense using auscultative techniques. This involved attaching the curette to the rubber tubing of a stethoscope.
- 7) The use of rubber cup and prophylaxis on a model.
- 8) The use and application of fluoride gels.

The objectives of the first year clinical sessions are:

- 1) Students should be able to accurately describe gingival characteristics with regard to colour, contour, consistency and surface texture.

2) Collect gingival crevicular fluid and monitor fluid levels with a periotron.

3) Describe the sulcular bleeding index (SBI).

4) Perform periodontal probing.

5) Use plaque disclosing techniques to quantitate plaque.

6) Correlate P11 with SBI and GCF readings.

7) Teach oral physiotherapy.

8) Re-evaluate oral hygiene at a follow-up visit.

In the second year, students practice all the techniques learned in the pre-clinical laboratories. They are also exposed to the EVA system for polishing proximal surfaces of restorations and the removal of overhangs.

In the third year, in an attempt to get away from numerical requirements, six periodontal patients, none of whom require periodontal surgery, are assigned to each student. Each patient receives an examination, scaling and root planing, polishing and oral hygiene instruction and is then placed on a three-month recall. In order to simulate a private practice situation each student is responsible for the maintenance of the periodontal health of the assigned patients until graduation.

In the fourth year, two surgical patients are assigned to each student who is in turn paired with a second year dental hygiene student. Together they cooperate in treating patients, with the hygienist carrying out the initial therapy and the student performing the surgery. Dressing changes and suture removal are performed by either member of the team.

### **B. Occlusion (Dr. R. Oles — University of Saskatchewan)**

In teaching concepts of traumatic occlusion and its clinical management, the University of Saskatchewan uses the target organ approach rather than concentrating on its periodontal manifestations. This method focuses not only on the effects of traumatic occlusion on the periodontium but also the effects on the temporomandibular joints and associated structures, the muscles of mastication, the lining tissues of the mouth, the crowns of the teeth and the pulps of the teeth. Occlusal diagnosis is emphasized in the undergraduate periodontics curriculum and the importance of a systematic case history, combined with radiographic and clinical examination, is stressed. Two occlusal treatment procedures are used in initial periodontal therapy viz., occlusal adjustment and the occlusal splint. The therapeutic philosophy of Ramfjord and Ash is advocated. Some problems encountered in teaching an occlusal philosophy in a college of dentistry are:

- 1) Improper diagnosis due to insufficient and inefficient diagnostic workup.

- 2) Failure to critically evaluate the results of treatment.
- 3) A tendency to assume that no pain means no problem.
- 4) The early exposure of the student to prosthetic occlusion. Because occlusal concepts taught in complete denture prosthesis are damaging when used in the natural dentition, the dental student should be introduced to physiology and pathophysiology of the natural occlusion in living subjects before he learns so-called ideal prosthetic or restorative occlusal schemes on articulators. Unfortunately, in the restorative-prosthetic view of occlusion, patients tend to be viewed as ambulatory articulators without nerves, muscles or periodontium.
- 5) Lack of reinforcement by some clinical faculty, of the physiologic concepts of occlusion and occlusal therapy being taught because of differing philosophies or indifferent attitudes.

In order to effectively teach occlusion, the following remedies are suggested:

- 1) We should concentrate on shaping the attitudes of the students.
- 2) Natural occlusal physiology and pathophysiology should be taught before restorative and prosthetic occlusion.
- 3) Diagnosis of the highest quality should be demanded.
- 4) Critical evaluation of treatment results should always follow the completion of treatment.
- 5) Occlusal therapy should be carried out whenever indicated.

#### C. Periodontal Surgery (Dr. T. Gould — University of British Columbia)

A review of the recommendations of various teaching conferences in periodontology held in the U.S.A. and U.K. during the past 26 years gave the overall impression that although the number and complexity of periodontal surgical procedures had been increasing, the clinical requirements of our undergraduate students in periodontal surgery have decreased.

Several possible reasons for this are:

- 1) The profession taking a more conservative approach to surgery.
- 2) Insufficient time in the undergraduate curriculum to teach surgical periodontics.
- 3) A lack of adequate staff to provide the close supervision necessary to teach periodontal surgery.
- 4) An insufficient number of patients requiring particular periodontal procedures.
- 5) Pressure from periodontists in the community against teaching students more advanced surgical techniques.

At the University of British Columbia the majority of currently accepted periodontal surgical techniques are covered in lectures

during the second and third years. Clinical teaching of periodontal surgery begins in the third year. During the first term of the fourth year, literature review seminar groups are held. These seminars help refine the knowledge of periodontal surgical procedures as well as increase awareness of clinical indications. In the fourth year, students have to complete or assist at least one surgical procedure and are given the opportunity to perform whatever surgical procedure is deemed necessary for their patients. All fourth year students had to be assisted at surgery by another fourth year student which increases the surgical exposure.

Since it is not possible to teach someone to be competent at periodontal surgery in just two sessions and since few graduates do any surgery in general practice, we must ask ourselves why we teach it to them at all? If our ultimate intent is to produce a 'supergeneralist' capable of performing adequately all aspects of dentistry then more time is needed in the periodontal curriculum to adequately teach students. This could come in the form of a compulsory one year pre-licensure internship. The most difficult question today is not what to teach, but how to teach it and how to develop objective criteria for measuring performance.

#### D. Apportioning of periodontic clinic time. (Dr. J. Speck — University of Toronto)

Of all the phases of periodontal surgery, the one that should be given the most emphasis in an undergraduate curriculum is disease control. If disease control procedures are implemented early, done regularly and performed well, then the need for some of the other therapies is reduced. This phase of treatment relies heavily on scaling skills. This is the most indispensable and predictably effective part of periodontal therapy, and even when surgical procedures are necessary, they include and require the fastidious removal of all local irritants and contaminated cementum relying heavily on scaling skill. Scaling is the main treatment modality of all periodontal problems. The art of scaling is the main requirement of periodontal therapy. Although in many offices today scaling is carried out by the hygienist, it is essential that the dentist be clearly more skilful in the use of scaling instruments and more knowledgeable in the care of the periodontium so that he can authoritatively supervise the hygienist's work and the patient's progress. It is also essential to teach students how to successfully teach their patients oral hygiene procedures. Although time consuming, the teaching of scaling and oral hygiene techniques is the most important aspect of teaching periodontics to undergraduate students.

The main aim of teaching periodontal sur-

gery to undergraduate students is to provide access to difficult areas of root surface so that adequate root preparation and removal of local irritants can take place. This involves instructions in open flap curettage and gingivectomy. Teaching of mucogingival and regenerative procedures, while interesting to the student and useful in selected situations, has a low priority in the undergraduate program at the University of Toronto. Undergraduate students, however, do receive lecture material about all periodontal surgical therapies and they observe or assist the graduate students during surgery.

Although the role of occlusion in periodontal disease is controversial, it is essential that the general dentist have a sound understanding of occlusion and occlusal therapy, not only from the point of view of periodontics but also for restorative dentistry. Periodontists understand functional occlusal relationships better than most other groups in dentistry and are highly qualified to teach in this area.

Dr. Speck felt that the periodontal clinic time should be apportioned in the following way: 60 per cent towards recognition and recording of periodontal disease and disease control procedures; 20 per cent towards occlusal therapy and 20 per cent towards surgical therapies.

### III. How can we develop enthusiasm for periodontology among the students and part-time teaching staff? How can we maintain such enthusiasm throughout the final year and into general practice?

Three papers were presented on this topic by Dr. R. Harvey (McGill University), Dr. S. Roy (University of Laval) and Dr. J. Stakiw (University of Western Ontario).

Dr. Stakiw felt that there was a lot of interest in periodontology which undoubtedly began at the undergraduate level. It was suggested that a close relationship between the departments of restorative and periodontics be maintained with emphasis being placed on the completion of periodontal therapy before restorative work was begun. The periodontal staff should include a general practitioner to reinforce the importance of good periodontal health in restorative therapy. Dr. Stakiw also felt that continuing education courses played an important role in maintaining interest by the general practitioner.

Dr. Roy listed the following methods for developing enthusiasm for periodontology among the students:

- 1) Course objectives should be defined so



that students are aware of exactly what is required of them.

2) The clinical instructor's enthusiasm, dynamism and display of knowledge are often a big factor in influencing the students' attitude.

3) Clinical cases should be used where possible to illustrate periodontal conditions as well as to show the students what can be accomplished with periodontal therapy.

4) Students should have the opportunity to treat and follow up cases in order to see the results of therapy.

5) Professors should emphasize the prevalence of periodontal disease in the general population and the need for periodontal therapy.

6) Clinical demonstrations should be used to allay fears which students may have towards carrying out various phases of periodontal therapy.

7) Students should be encouraged in their work and allowed to work on their own whenever possible.

In order to develop and maintain enthusiasm among the part-time staff Dr. Roy suggested allowing clinicians to become more involved in giving lectures and seminars as well as consulting them when making student evaluations. He also emphasized the importance of good communication between the head of the department and part-time staff.

Dr. Harvey made the observation that despite having a fairly comprehensive course in periodontics which followed accepted guidelines and seemed to pique the interest and enthusiasm of students during third year, somehow, towards the middle of the fourth year, students seemed to forget everything they had learned in periodontics in previous years. In the Educational Workshop in Periodontology held in Durham, New Hampshire in 1974, he had raised the same issue and was surprised to discover that all U.S. schools had the same complaints. After 40 years of teaching periodontics he wondered what, if anything, he had contributed towards turning out students knowledgeable and enthusiastic towards periodontics. He raised the question, "What was I doing wrong?"

#### **IV. Are our graduating students really capable of recognizing periodontal disease?**

This session took the form of a round table discussion and was chaired by Dr. C. Williams (University of Toronto). In his opening remarks, Dr. Williams stressed that recent surveys indicate that the general dentist spent a very small percentage of his practice time treating periodontal disease. He asked, "Was this because they did not

recognize periodontal disease or because they chose not to treat it even though they recognized it? In the latter case were they conditioned in dental school to believe that the real practice of dentistry involved only the restoration of teeth? When compared to other dental disciplines only 7 per cent of total teaching time was spent teaching periodontics at both the Universities of Toronto and McGill. Are we spending enough time in our dental schools teaching periodontics so that dentists can meet the needs of the public?"

The panelists for the round table were Dr. G. Drennan, Dr. E. Hannigan and Dr. A. Marcil, all practicing periodontists. The following is a composite summary of what was said by the three panelists.

The feeling was that graduating students were capable of recognizing periodontal disease but the question was raised as to whether they were actually interested in incorporating periodontics in their daily practice. The observation was made that new graduates tended not to refer patients, preferring instead to either treat the patients themselves or ignore periodontal disease completely. There were a number of possible reasons for this:

1) We were probably trying to teach our students too much at one time and in doing so we may have ended up intimidating them.

2) Dentists were so conditioned to treat dental caries in one appointment procedures that they found it difficult to make the transition to treating chronic periodontal disease where treatment was more drawn out and time consuming.

3) All three panelists agreed that the most important factor influencing the new graduate's attitude toward diagnosing and treating periodontal disease in general practice, was an economic one. When a new graduate first sets up practice, the cost is so high that his most overriding concern is to improve his cashflow to meet his loan payments. This could result in short-cuts in diagnosis and treatment in order to reduce the time taken per procedure. Many dentists did not even own a periodontal probe.

Some participants felt that dental schools might be concentrating so much on pathology that they sometimes forget to teach students what healthy tissue looks like. As a result, when graduates begin practising the changes have to be gross before they can be recognized. The question was also raised as to whether the diagnostic protocol taught in dental schools was so elaborate that they were not applicable to a private practice situation. Some also felt that the dental profession needed to upgrade its public image from that of 'pluggers and pullers' to that of one responsible for the overall care of the oral cavity.

#### **Summation (Dr. Raul G. Caffesse, The University of Michigan)**

Canadian dental schools and periodontists appear to have the same problems as their American counterparts and their proposed solutions seem to be similar. The most crucial problem we face today is not how to diagnose and treat periodontal disease but how to influence delivery of care. This is certainly the challenge for the future.

After reviewing the topics from the previous presentations, the conclusion was reached that all of them carried sensible approaches to the teaching of periodontics and that actually the present undergraduate periodontics curriculum at the University of Michigan could be considered a composite of the different positions presented.

A review of the present and future challenges facing the teaching of periodontics was outlined and discussed. Highlights of problems facing periodontics were:

1) Periodontics had one of the poorest images among freshman dental students when compared to other areas such as oral surgery, endodontics or restorative dentistry. Very few incoming students picture themselves devoting their professional life to the preservation and restoration of periodontal health. The periodontal educator is therefore at a disadvantage from the outset since he has to contend with this unfavorable attitude towards periodontics.

2) It is difficult to teach periodontics at the pre-clinical level since unlike restorative dentistry, where typodont models with objective criteria can easily be used, periodontal procedures are difficult to reproduce, and objective, easily visualized end-points are very hard to teach.

3) Dental schools need to teach and stress more prevention within the curriculum, both didactically and clinically. Dental students, starting in the clinical area during the first year of the curriculum, could be assigned a number of young patients with normal healthy gingiva and given the responsibility of maintaining these patients in a state of health until graduation. This implies the need for proper preventive maintenance, which should include consideration of both caries and periodontal disease.

4) Dental schools need to institute an effective recall system at large, which would allow each student to experience the benefits and effects of long-term prevention and therapeutic dentistry.

5) The amount of support received in periodontics from other dental disciplines in the curriculum is inconsistent. Although departments might agree in principle that patients need to be evaluated periodontally,

and treated if necessary, prior to other treatment, cases can always be found which have bypassed the system. Whereas periodontal educators need to start preparing students today for a future dental practice which will involve more periodontics, they face a difficult time convincing other members of the dental faculty that this is a reality and that the weight in the curriculum should be shifted towards prevention and preservation of health.

The final product of the dental curriculum should be clearly defined with the necessary adjustments to the future needs in dentistry. Schools must decide what they think their graduates should be capable of doing.

6) The present system of evaluation of didactic and clinical courses should be modified to stress understanding rather than knowledge. Students should be taught how to think, evaluate, deduce and discern.

7) All dental educators, irrespective of their area of interest, should present to the students a common image of what dentists and dentistry represent. In order to be effective, everyone involved should be convinced of what dentistry should represent. If prevention and maintenance of health is the goal, dentists must practice what they preach.

Unless dental educators believe in what they teach, they will make very poor teachers.

8) Although students are taught how to diagnose and treat periodontal diseases, educators have failed to teach them how to sell periodontal care. It is necessary to emphasize courses in practice and patient management in periodontics as part of the curriculum. Students should learn how to market their professional services.

The future of periodontal care is contingent upon the level of the general dentist, since it is impossible to expect that specialists have the capability of managing the widespread level of disease present in the population at large. Consequently, dentists should be prepared to deliver and to market periodontal care as the backbone of their dental practice.

9) Public awareness regarding periodontal diseases needs to be elevated in order to increase demand for treatment. However, the profession should be prepared to respond to this challenge.

10) Insurance companies are somehow dictating treatment to the dental profession. Although incorrect, subscribers tend to assume that services not covered by their insurance are not essential. Such is the case

with preventive and maintenance periodontal procedures. The dental profession needs to educate insurance companies in recognizing the importance of periodontal diseases, allowing payments for periodontal treatment, especially in the preventive and maintenance categories. Carriers and subscribers must recognize that, in the long run, prevention pays.

11) Dentistry is facing, and will continue to face, increasing problems of litigation. Dentists and hygienists can be found liable for ignoring or failing to diagnose, treat or refer for treatment, periodontal diseases. Future dentists and hygienists should be appraised of this possibility and be prepared for their professional responsibility.

12) Peer review needs to be effectively introduced and implemented in dentistry to ensure that treatment, including periodontics, is adequately carried out.

Changes occurring in dentistry in the years ahead need to be positive, especially if they are to allow reaching the ideal goal of dentistry; the maintenance of the dentition in form, health and function for the lifetime of the individual. The challenge in dental education is great, the present is exciting and the future is bright and promising.

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# Specialty Features

## CDA TEACHING CONFERENCE

**Editor's note:** The CDA Teaching Conference, with the theme – Periodontics and the Dental Curriculum – was held in Halifax, N.S. on June 20, 1986. Crawford A. Bain, BDS, DDS, Cert. Perio. Cert. Fixed Pros., MS, Head, Division of Periodontics, Department of Restorative Dentistry, Dalhousie University, Halifax, was the Chairman.

Copies of the presentations at the Conference have been made available to this Journal and will appear in this edition and the June edition of JCDA. Chairman Bain opens the series with a commentary.

### Times are They A'Changing?

The dental profession has, by its very effectiveness, dramatically altered the dental disease patterns of the North American patient. Fluoridation, preventive programs and heightened patient motivation have greatly decreased caries, tooth loss and edentulism while similar medical advances increase the life expectancy of an increasingly dentate geriatric population.

Regrettably, these changes in dental disease patterns and needs have not always led to a parallel modification of the Dental Curriculum. As many hours as ever seem to be spent on Operative Dentistry and Removable Prosthodontics, many more courses are added than removed or reduced, and the resultant packed, and progressively less relevant, curriculum places unprecedented stresses on dental students. Recent consideration has been given to the addition of a fifth year either within or beyond the dental schools and yet how much of this



Photo: Clarence Mercatle

Presenters at the CDA Teaching Conference posed for JCDA at their Halifax session. With the Chairman, Dr. Crawford Bain, extreme left, are (from left): Dr. Max Listgarten, Chairman, Dept. of Periodontology, University of Pennsylvania, Philadelphia; Dr. John Eisner, Associate Professor of Community Dentistry, Faculty of Dentistry, Dalhousie University; Dr. David Donaldson, Assistant Dean, Faculty of Dentistry, University of British Columbia, Vancouver; and Dr. Jukka Ainamo, Chief, Epidemiology, National Institute of Dental Research, Bethesda, Maryland.

is due to the retention of increasingly less relevant courses in a form not dissimilar from that taught in the 1950's and 60's.

The CDA Teaching Conference on Periodontics held in Halifax in 1986 focussed specifically on Curriculum Change as it relates to Periodontics. Unlike caries, periodontal diseases have decreased little in the recent past and, with an aging dentate population, the relative importance of Periodontics is increasing. The press, the public and, regrettably, even the legal profession, are forcing dentists to face up to responsibilities in managing the "other dental disease". The purpose of this Conference was to ask Dental Faculties to also face up

to the needs for a Curriculum Revolution. But to paraphrase John Lennon:

*"You say you want a revolution . . . Well let me see your plan"*.

The papers which follow outline in detail the basis of a plan for significant curriculum improvements. One question remains; do our Faculties of Dentistry have enough leaders prepared to override the conservative status quo and move Academic Teaching into the 21st Century?

*Crawford A. Bain, BDS, DDS, Cert. Perio., Cert. Fixed Pros., MS Head, Division of Periodontics Dalhousie University*



## Automation and your dental practice

### OPEN WIDE



#### Running a Tight Ship in Vancouver

The West Broadway Dental Group in Vancouver, B.C. was formed in 1970, making it one of the longest established group dental practices in Canada. Three years ago they first started using Exan's Dental Practice Management System. In "computer years", that's almost as long ago as The Flood.

Dr. Ken Neuman of the West Broadway Dental Group says he and his colleagues bought the Exan system in order to make their practice more productive. "We wanted to put the computer to work on the more tedious and time-consuming aspects of practice management, and let the dentists and our support staff spend more time with our patients."

One of the areas where the Exan system has really paid off, says Neuman, is financial control. "Financial control is very important," says Neuman. "Our computer lets us keep close, business-like controls that would be impossible to put in place manually."

"There are all kinds of ways the computer has helped us run a tight ship," he says. "When we used a one-write system to do our accounting, we never balanced to zero. Thanks to the computer, we've never been out of balance once. We're happy, and so is our accountant."

The Exan Dental Practice Management System keeps track



*West Broadway Dental Group celebrates the successful implementation of their new EXAN software. Lions Gate Bridge, Vancouver, is in the background.*

of daily patient treatments and Accounts Receivable. It produces a daily report, including patient names, phone numbers, their last date of payment, their outstanding balance, and whether their account is patient- or insurance company-paid.

"Our system processes insurance claims and keeps track of all the various insurance forms," says Neuman. "It also keeps us up to date on insurance company Accounts Receivable."

The system lets Neuman and his colleagues do year-over-year monthly comparisons of production and collections. "For example, we can check March 1987 over March 1986 to see if our practice is expanding. That is very important information when you want to see if you are growing or not."

The Exan system also lets the West Broadway Dental Group keep track of auxiliary production. "For example, we can get separate hygienist production reports whenever we want them," says Neuman.

Neuman says the Exan system makes for quicker preparation of bank deposits, because daily bank deposits can be made right from the computer print-out. "It will

even discount credit cards automatically," says Neuman.

#### Vancouver dentist says credit cards "terrific"

Although dentists in Ontario are just beginning to accept credit card payments for patient treatments, their colleagues in British Columbia have been letting their patients "pay with plastic" for years.

Dr. Ken Neuman of the West Broadway Dental Group says credit card payment lets patients get work done that they ordinarily might not. "It lets them spread their payments to the dentist over an extended period of time," he says.

Neuman says that at his practice about 15% of monthly patient payments are made by credit card. "We think credit cards are terrific," enthuses Neuman. "VISA or Master Card don't bounce; a cheque can."

Neuman says that payment by credit card allows dentists to extend their patients inexpensive credit. "It costs us very little," he says. "We get paid immediately by the credit card company, less a discount of between 1.69% and 2.0%."



# SMART TALK



## Whistler/Blackcomb Ski Trip

If insider reports from EXAN's Whistler/Blackcomb Ski and Computer Seminar are anything to go by, this winter retreat has already become a tradition.

Described by the EXAN people as 'a skier's best opportunity ever to combine business with pleasure', the Whistler Weekend will certainly be a major event again next winter.

For the uninitiated, the competitively-priced package deal includes four nights' accommodation, plenty of skiing, and access to the best brains in dental practice automation (EXAN's of course) for a few non-skiing hours.

Although details of the next Whistler/Blackcomb weekend have not yet been finalized, those who are interested are asked to call our toll-free number 1-800-663-6228 and register their names. As soon as dates have been confirmed, we'll send out the information in the mail.

## Convention Time

Don't forget to come and visit us at the two upcoming conventions this Spring. They are the Ontario Dental Association Annual Convention in Toronto, May 10-13th (Booth # 57) and the Joint Convention of the Canadian Dental Association and the Order of Dentists of Quebec in Montreal, May 24-28th (Booth # 401).

At both conventions EXAN will be providing a computerized 'Message Center' service. Be sure and make use of it to contact other conference participants.

Make sure you visit our booth at either convention. You will have a chance to get a hands-on demonstration of the many advanced program features of the new EXAN System 4.0. Many of these features are not available with any other software system.

## Omer Reed

This is the last call for registrations for the May 9th Omer Reed Seminar at the Sheraton Centre, Toronto. Omer Reed is probably the best known dental futurist, and if you read the EXPERTVIEW column in this issue, you'll know what delegates to the seminar can expect.

## EXPERTVIEW



Dr. Omer Reed

*For this issue's 'EXPERTVIEW', we interviewed Dr. Omer Reed, a dentist for the past 30 years and a lecturer on the paperless, front-deskless dental office. Dr. Reed is the "Keeper and centre" of a three-person dental office in Phoenix, Arizona.*

Characterized as a bit of a maverick by his professional colleagues, Dr. Omer Reed is a philosopher of change, growth and learning in dentistry. Change is necessary to life, Dr. Reed states, and at no time has this been more apparent than in today's post-industrial, information-based society.

"The number of practitioners is changing," Dr. Reed says, "and we can expect to see more HMOs (Health Maintenance Organizations), more capitation, and changes in the health delivery systems." These changes affecting health care systems will be part of more sweeping social upheavals on the horizon; patients, their care, and the treatments themselves will all be radically different by the year 2000.

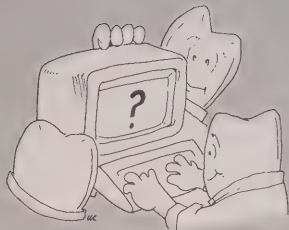
A larger percentage of patients will be 'values-driven' and dentists must be ready to offer them high quality, personalized and efficient care. Many will be called to offer this modern health care delivery, few will respond.

"Private practices will become more rare," says Dr. Reed. Their survival will depend on the dentist's ability to modernize; automated scheduling, recalls and marketing will become necessities in the competitive economic times ahead.

But automation is only part of the solution Dr. Reed advocates. "The philosophy must precede the mission," Dr. Reed says. Dentists must determine what their function will be, how they would like to operate, and what their final objective will be. With the concept of a practice in place, dentists can then put their ideas to work: selecting the training and development that is required, creating the suitable environment, and incorporating the software and hardware systems that will facilitate the philosophy.

"Just as form follows function, structure has to follow strategy," says Dr. Reed. "But this is usually badly reversed in dentistry." Today's average practice is a structure and an organization looking to slot in patients. The situation is akin to producing various shapes and sizes of dental work, then looking for the patients that fit them. In contrast, Dr. Reed tries to create the environment he believes his patients, his staff and his partners want, then builds the practice structures that will accommodate these desires.

# STUDY GROUPS



## Communicate, Communicate...

Good computer programs can't be created in a vacuum. So when EXAN began to develop its software packages for dentists, it went straight to the dentist's mouth.

The company set up a series of continuing Study Groups across Canada which run the programs and discussed how various functions can be fine-tuned to accommodate the specific demands of dental practice.

But a funny thing happened with the Study Groups. While discussing how the computer improves communications with patients, the Groups found it also improved communications between its members.

## Sharing Procedures

"Study Groups give us the opportunity to find out what's happening in our offices," reports Dr. Roel Wyman of the Malton Dental Group, Malton, Ontario. The Study Group in which Dr. Wyman participates comprises 14 fellow dentists from Brantford, Brampton, Oshawa, Collingwood and Toronto. And while exploring the EXAN software, the members found that they were also sharing procedures that other members hadn't begun to use.

"The systems have so much potential" says Dr. Wyman, who upgraded to an EXAN system last year after originally computerizing his practice in 1979. "There's a lot in them and most practitioners aren't using everything. But when one practice hears that another has carried a certain area farther, or has come up with an idea for an application, then everybody starts to play around with it."

Some of the Study Group's suggestions have already borne fruit. Members found that patient files were difficult to access and suggested some improvements. As a result, patient names can now be accessed quickly by typing in the first few letters in the patient's name. When a patient calls to confirm an appointment, for example, the dental assistant can enter the name and have direct

access to all the necessary information.

## Practice in Practice

In a similar vein, the system's patient scheduling module has been updated to make it more 'user-friendly' to dental practices. Programmers aren't practitioners, and this software fine-tuning is instrumental to EXAN's success since "ideas get worked out in practice," Dr. Wyman says.

"The whole idea of a system like EXAN's," he adds, "is communication and contact. The system provides us with an ability to analyse our patient inventory. So no matter what kind of patients we have, what kind of work we do, it's very useful as a marketing tool." In Dr. Wyman's Group, a periodontist can learn some tricks of the trade from an orthodontist, and a solo practitioner can learn from a colleague in a large practice.

"I see our group as being very useful — not just a vehicle for learning to use the computer, but as a means of getting together with other practitioners with the computer as a kind of axle," Dr. Wyman says.

## No Front Desk

How does this look in practice? First of all, there is no front desk. Patients arrive at the office and are greeted by a dental assistant. The setting is one of "casual elegance" with comfortable furnishings and pleasant decor. Nostalgia buffs will be disappointed to find no aging copies of Time and Newsweek to read over and reminisce.

The patient is taken to the office's fruit and juice bar, and offered a drink or a frozen yogurt. "They have a coffee, talk about the procedures that are going to be performed, and maybe talk about economics if that hasn't been settled already," Dr. Reed explains.

"The assistant never leaves the patient throughout the procedure. We want to have personal humanness — high tech, high touch."

## No Paper

Behind the scenes, Dr. Reed's staff operate computer terminals in every room and at separate work stations, keeping track of patients, procedures performed, upcoming appointments, billing, and all the other administrative details. All information is kept in the data base; no paper is produced. When a patient's procedure is finished, the assistant leads him back to the front area normally occupied by a front desk. Over another frozen

yogurt, the patient can ask questions, discuss the procedure with the assistant, and arrange for the next appointment.

The result is "a unique, cutting edge concept," says Dr. Reed. "People like it and they send their friends." Dr. Reed also claims that 'high tech, high touch' can cut the normal attrition rate in half — taking time to relate in a human way with patients will generate interest in their own health care, maintain contact, and create an ongoing relationship.

*Continued on page 4*



## EXPERTVIEW *continued*

### No Plaster

"In the next 10-15 years, we're going to have increasing growth in the number of dentists, and increasing acceleration in the treatment of disease," says Dr. Reed. Part of that acceleration is already at hand with the state-of-the-art five-axis micromilling machine for crown work. The \$100,000 device uses a laser scanner to digitalize the crown, relaying the information to a second computer which makes the crown in under 18 minutes. Better health care delivery justifies the cost and keeps his practice at the leading edge, Dr. Reed says.

The new face of dentistry isn't for everyone, Dr. Reed admits. "First you have to concede that these ideas exist. You have to want change. I don't know what I'll look like when I get there, but I have to go anyway," Dr. Reed says. You have to make change happen before change happens to you. If you let change overtake you, Dr. Reed says, you'll be less prepared and less able to adapt. It is a choice every dentist has to make: to be driven by a unique vision of the future, or to react in blind panic to the changing world around you.

The economics of the 1980s and 1990s will separate the leaders from the stragglers. Concludes Dr. Reed: "There will be two kinds of dentists — those who do change, and those who will be working for those who do."

## ONE BYTE AT A TIME

### New Software for appointments

Patient appointment scheduling is the hub of the dental office, around which everything revolves. Until recently, no satisfactory software was available to enable dentists to automate their scheduling functions. An automated appointment scheduler has recently been

developed by EXAN. The scheduler was created with input from the company's regional Dental Study Groups, made up of practising dentists across Canada. Its advanced design has overcome shortcomings inherent in systems previously available on the market.

Bookings can be entered or accessed by more than one operator at a time so that a patient's next appointment can be scheduled at the front desk, the operator, or at a computerized make-ready area.

### Searching Made Easier

Appointments can be searched by date, day of the week, hour, operator or dentist, or any combination of the above. At a glance the system shows not only the current appointment, but all future appointments as well. The scheduler is integrated with other functions: treatment planning, treatment history, next appointment, account ledger card, outstanding balances, and important hot comments concerning the patient. This allows all the information required to complete a booking to be instantly available to the receptionist.

Although it often takes several calls to finalize

a booking, with the integrated nature of the scheduler, a single call is usually all that is needed. The system provides all required chart, insurance coverage, psychographic, demographic and health alert information for each patient.

### No More Missed Charges

Additionally, through use of the system's database scanning capabilities, unbooked time created as a result of cancellations may be easily filled because the system quickly identifies patients available at short notice. Missed charges due to no-shows are therefore virtually eliminated. You can maximize your ability to turn your practice's dental inventory into production.

An important feature of the system is its ability to generate printed operator schedules which give you information on necessary pre-treatments (eg. lab work). This allows you to be fully prepared for patients when they arrive. It also eliminates downtime in your operatories. You can match your resources with patient demand, enabling you to make efficient use of your time, your patient's time, and your staff's time.



### Automation and your dental practice

is published four times a year by EXAN COMPUTER SYSTEMS & SERVICES LTD, 4171 Dawson St, Burnaby, BC, V5C 6B7

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Art: R McInnis Design Associates

Publishing consultant: EMS Marketing Communications Inc.

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*"The EXAN dentist — ready for the next generation"*

# PERIODONTICS AND THE DENTAL CURRICULUM

## CURRICULUM CHANGES BASED ON CHANGING DISEASE PATTERNS

Jukka Ainamo, DDS, PhD

Professor of Periodontology,

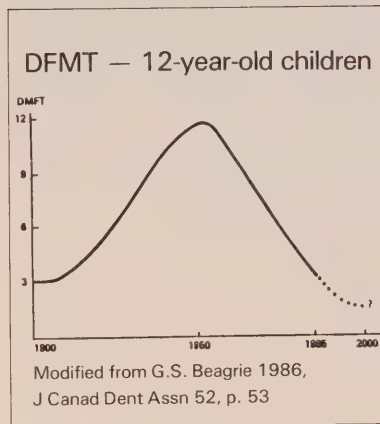
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**T**he aims of this presentation are to outline some of the recently observed changes in oral disease patterns in industrialized countries and, based on these changes, try to predict the corresponding disease patterns as they may or may not occur in future generations of the population. Predicting, it is said, is always difficult, especially so if one is asked to predict the future. Instead of relying too much on blurry crystal ball visions, this text will as much as possible concentrate on existing knowledge and facts and trends available in published and yet unpublished research reports. Particular emphasis will be placed on reviewing some of the latest research findings relating to the epidemiology and the anticipated treatment needs of periodontal diseases in future low caries societies.

### The Decline in Dental Caries

Probably the greatest news in the history of dentistry so far was the realization in the early and mid-70's of a strong decline in dental caries among children and young people in many of the world's industrialized countries.<sup>1-3</sup> Although much work had been conducted in order to achieve such a change, the dental profession seemed genuinely surprised over the extent of the unexpected success. At the same time,



*Fig. 1. Development of DMFT scores of 12-year-olds during the 20th century. Schematic drawing based on the situation in industrialized countries.<sup>5</sup>*

however, also great concern was expressed about the dental practitioner's future busyness in an assumedly caries free society.<sup>4</sup>

The actual year of reversal of DMFT scores at 12 years of age varied from one geographic area to another. In **Fig. 1** the turning point is suggested to have been in the early 1950's.<sup>5</sup> In other countries, it may have been somewhat later. The development of the DMFT scores of 12-year-olds

through the 20th century (**Fig. 1**) shows that in 1950 12-year-olds had a DMFT score of about 12. In 1986 those same subjects were 48-year-olds and as a group probably still have poor oral health. The 38-year-olds of today were slightly better off. They started out having only 9 or 10 DMFT teeth at 12 years of age in the early 1960's. In 1970 the caries score of 12-year-olds was already down to six DMFT teeth. When those individuals reach the age of 48 years, which will happen as late as in the year 2006, their chances of having relatively healthy teeth should be substantially better than were the chances of the 48-year-olds of 1986.

It is evident that the observed decline in dental caries will take a long time before reaching full effect. To date, changes to the better have been reported mainly for children and youngsters under 20 years of age. Only a few corresponding observations have been made in groups of adults in their early 20's.<sup>6,7</sup> In the age group of 35-44-year-olds, which is one of the WHO standard age groups, no increase in the number of healthy teeth has to date been reported from any country. However, the 35-44-year-olds have benefitted from the improved availability of dental care services in that the FT/DMFT ratio has improved and, as a parallel phenomenon, the average number of teeth retained has increased.<sup>7-9</sup>



## Measurements of Periodontal Disease

The lack of a rapid and simple measurement of periodontal treatment needs has long constituted a major problem in both treatment delivery and, more recently, in oral health services research. The collaboration over many years between the FDI and the WHO, resulting in the development of the Community Periodontal Index of Treatment Needs (CPITN),<sup>10-12</sup> seems to have given rise to a new wave of interest in the study of what actually should and could be done to promote periodontal health worldwide.

According to the CPITN, the dentition is divided into sextants, two of them extending from canine to canine and four from first premolar to second molar (Figs. 2A and 2B). For each sextant, only the code number of the highest treatment need indicator is recorded. The code numbers are:

- 4 = pathologic 6 mm or deeper pocket(s)
- 3 = pathologic 4 or 5 mm deep pocket(s)
- 2 = pockets 0-3 mm, calculus or overhang of filling

|       |       |       |
|-------|-------|-------|
| 17-14 | 13-23 | 24-27 |
| 47-44 | 43-44 | 34-37 |

Fig. 2A. For scoring according to the Community Periodontal Index of Treatment Needs (CPITN), the dentition is divided into sextants. In adults, all teeth in each sextant are examined before recording the highest treatment need.<sup>10</sup>

|    |    |    |
|----|----|----|
| 16 | 11 | 26 |
| 46 | 31 | 36 |

Fig. 2B. At under 20 years of age, false pockets frequently occur around still erupting teeth. The sextant score, therefore, is recorded after examination of only six index teeth.<sup>11</sup>

|    |   |   |   |
|----|---|---|---|
| A. | 4 | 1 | 4 |
|    | 4 | 2 | 3 |
| B. | 3 | 0 | 3 |
|    | 2 | 0 | 1 |
| C. | 1 | 0 | 1 |
|    | 1 | 0 | 0 |
| D. | X | 2 | 3 |
|    | 4 | 2 | X |

Fig. 3. The six code numbers (periodontal treatment need indicators) per patient give an immediate and for most purposes sufficient impression of the patient's periodontal treatment needs (FDI 1985).

- 1 = pockets 0-3 mm, bleeding after gentle probing
- 0 = healthy sextant
- X = missing sextant

Although only six digits are recorded per person, a wealth of information is obtained, both for purposes of treatment planning for individual patients and for the planning of needs and priorities in community health care programs. In England, the CPITN recordings are being considered for official use in the National Health Service. Examination and recording according to the CPITN only takes some 1-3 minutes and yet allows classification of the individual patient into one of three treatment categories. A person with codes 0 and 1 only needs oral hygiene instruction (OHI), another person who also has codes 2 and/or 3 needs OHI and scaling (Sc), and a person with one or more sextants scoring code 4 needs, in addition to OHI+Sc, also surgery or other suitable treatment of his or her advanced periodontal disease.

Of the examples given in Fig. 3, Patient C (codes 0 and 1) can on the basis of the CPITN recordings alone, be referred to a suitable auxiliary for oral hygiene instruction. Patient B (codes 1, 2 and 3) can, in addition, be scheduled for scaling by a dental hygienist or by the dentist during a subsequent visit. Patients A and D (code 4) are really the only ones needing detailed measurement of all deep pockets in the sextant(s) affected. However, even in those two cases the CPITN recordings are sufficient, provided that the dentist wants to refer the patient to a specialist periodontist. The detailed examination and recordings should, of course, be performed by the person who will take responsibility of the treatment of the advanced periodontal disease.

Not only do the six CPITN code numbers classify the individual patient according to the highest treatment need indicator observed but also they show the number of sextants affected (Fig. 3). It was demonstrated by the group Bellini, Gjermo and Johansen, the developers of the previously used Periodontal Treatment Needs System (PTNS)<sup>13</sup> that the number of deep pockets in one quadrant of the dentition has less influence on the time needed for treatment than the number of quadrants affected. Having several deep pockets in one CPITN sextant, thus, represents a smaller treatment need than having only one or two deep pockets in two different sextants.

When groups of people are examined according to the CPITN, standard tables can be easily compiled to show, for example, the percentage of subjects in a given age group who have one or more sextants scoring code 4. Another standard table is used for showing severity levels, i.e., how many

sextants per person need each type of treatment (Figs. 4 and 5).<sup>14,15</sup>

Results from CPITN studies in Italy and Finland indicate that the proportion of children with dental calculus increases from only around 5 per cent at ages 7 to 8 to some 30-40 per cent at ages 14-17 years.<sup>14,16</sup> Advanced forms of periodontal disease are rare also in young adult age groups. At 25 years of age only 1 per cent had 6 mm or deeper pockets in Finland as compared to 2 per cent in Italy. In 55-64-year-old Italians the corresponding prevalence of need of advanced treatment was 22 per cent while 27 per cent of 65-year-old dentate Finns were found to have one or more code 4 sextants.<sup>15,17</sup>

By cross-tabulation of code numbers against the number of sextants affected, a breakdown becomes available which gives, among other information, the percentage of subjects with 0-6 code 4 sextants or the percentage of subjects per age group with three or more healthy sextants. The latter measurement has been used as a criterion of an "acceptable" level of periodontal health or, actually, of periodontal self care, and it formed one of the basic elements in the determination of periodontal health goals for the year 2000 in Europe.

"Three healthy sextants" was chosen as a criterion of acceptable health (health behaviour) for several reasons. Having three or more healthy sextants means that at least one of the four posterior sextants is healthy. This could not be the case in the absence of active self care by the patient. Also, it was realized that it is rare to see a dentition that would score code 0 in all six sextants (Figs. 4 and 5). A goal of six healthy sextants would, therefore, have lacked the flexibility required of an operational goal. One of the periodontal health goals agreed upon was that 90 per cent of 18-year-olds in European countries should have at least three sextants scoring code 0 in the year 2000.<sup>18</sup> In the study of the periodontal conditions of Finnish teenagers, about 50 per cent of 17-year-olds filled this requirement already in 1983. The 18-year-olds of the year 2000 were born in 1982 which means that there is ample time to try to change their periodontal health behaviour for the better. There seems to be reason to believe that the goal actually can be achieved.

The analysis of the number of sextants scoring code 4 in the groups of subjects with advanced periodontal treatment needs revealed that periodontitis with 6 mm or deeper pockets seldom affects all sextants alike in one and the same individual. Of the 895 dentate 25-65-year-old subjects in the Finnish sample, a total of 77 (8.6 per cent) had one or more sextants scoring CPITN

code 4. In 45 subjects, however, which is 58.4 per cent of 77, code 4 was found in only one of the remaining sextants.<sup>19</sup> This important information has already been confirmed by several investigators in both Europe and the U.S.<sup>20-22</sup>

## Missing Teeth

In a discussion on potential pressures to suggest curricular changes, knowledge about the type and quantity of existing and/or projected treatment needs must have a major impact. Population scores of past experience of caries as well as periodontal diseases have often been given as average severity scores for that part of an age group that has teeth. The proportion of edentulous subjects has in many cases not even been mentioned. And yet, it certainly makes quite a difference in amount of treatment needed if complex periodontal care, for example, is needed by 27 per cent of all 65-year-olds in the study sample or only by those 65-year-olds who have natural teeth. In the example case from northern Finland, a total of 70 per cent of the 65-year-olds had lost all their teeth. When the subjects found to have one or more CPITN codes of 4 were distributed over the entire age cohort surveyed, including those without teeth, the prevalence of advanced treatment need at age 65 dropped from 27 per cent to only 8 per cent (Table 1).<sup>17</sup>

Periodontal disease has always been said to increase with age. This was true also in the Finnish study for the dentate part of the population. However, when the need of advanced periodontal treatment was projected over the total age cohorts of 50- and 65-year-olds, the need of complex treatment was found to decrease from 10 per cent in the 50-year-olds to 8 per cent at age 65.

In a concurrent survey using the same research protocol in a comparable area in Sweden, the prevalence of dentate subjects with one or more CPITN codes of 4 at age 65 was exactly the same as in the Finnish dentate study population, i.e., 27 per cent.<sup>23</sup> In the Swedish sample, however, only 51 per cent of the 65-year-olds were edentulous as compared to the 70 per cent in Finland. The corresponding prevalence of the need of advanced periodontal care in the total age cohort of Swedish 65-year-olds was 13 per cent which is five percentage points higher than that scored for the Finns (Table 1). It is, of course, a truism to state that one must have teeth to have periodontal disease. On the other hand, it is also worth keeping in mind that a decrease in the proportion of edentulousness will in the future result in an increase in the number of subjects at risk of periodontal problems. Among 45-year-old and older subjects in a

low caries area in Nigeria where none of those examined was edentulous, a total of 53 per cent had 6 mm or deeper pockets in one or more sextants (Table 1).<sup>24</sup>

Not only being dentate or edentulous but also the number of remaining teeth (sextants) seems to affect the frequency of occurrence of advanced treatment needs. In the group of 65-year-old dentate Finns, an average of three out of six possible sextants had been retained (Fig. 5). A further analysis was made in order to study whether 6 mm or deeper pockets occurred more often in the strongly reduced than in the less strongly reduced dentitions. The result of the analysis was that the prevalence of advanced treatment needs at age 65 years was more than twice as high among those with 4-6 remaining sextants than among those with only 1-3 remaining sextants (Table 2).<sup>19</sup> One might as well have expected that the small remaining dentitions, having already lost many teeth, would have been more often affected. A greater number of teeth remaining at risk of advanced periodontal disease seemed, however, to be more closely related to occurrence of advanced disease than the past experience of disease and corresponding extractions of teeth.

## Trends in Periodontal Health

Despite substantial improvements in the caries situation among children and young adults, there is little information available of a corresponding positive change in periodontal health. The lack of knowledge is partly due to a sparsity of both longitudinal and sequential cross-sectional studies. As for children and young adults, however, the feeling seems to be that gingival health over the past 10 years has slightly improved.<sup>25-28</sup> In adults the change, at its best, has been that the portion of subjects with advanced forms of periodontal disease has decreased.<sup>29-30</sup> Among 35-year-old citizens in Oslo, Norway, for example, 80 per cent of the subjects examined had a need of scaling and/or complex treatment as assessed using the PTNS in 1973 and again, 11 years later, in 1984.<sup>31</sup> The difference, however, was that in 1984 only 24 per cent needed complex treatment as compared to 36 per cent in 1973. This improvement had occurred parallel with an increase in mean number of remaining teeth from 25.7 in 1973 to 27.2 in 1984. For correct understanding of the improved periodontal health among adults in Oslo, one should realize that Norway is the country in Europe with the longest traditions in both the teaching and practising of modern periodontics.

In populations that currently have high proportions of elderly adults, even a decrease in periodontal disease prevalence

will not necessarily result in a decreased need of periodontal care as long as the number of teeth in the age group is increasing. The trends towards lower proportions of subjects losing all their teeth and the increase in the average number of teeth per person will, most likely, for a long time suffice to outweigh any slight improvements in periodontal health.

## Trends in Adult Caries

Where periodontal disease has been considered a disease of adults, dental caries has been implied to affect mostly children and to be a minor problem in adult and elderly groups of people. The assumption has been that the caries activity becomes reduced with advancing age. This may be true in some countries but was recently found not to be the case in the study of adults in Finland.<sup>32</sup>

When in the already mentioned groups of 25-, 35-, 50- and 65-year-old subjects in northern Finland the numbers of decayed (D), filled (F), missing (M) and indicated-for-extraction (I) teeth were recorded, the number of teeth needing fillings was, truly enough, found to decrease from one age group to the next. However, when the number of D-teeth was determined in per cent of the number of remaining teeth, no variation was found with age. In all age groups, the proportions of both sound and decayed teeth seemed to be more or less constant while increasing shares of filled teeth were

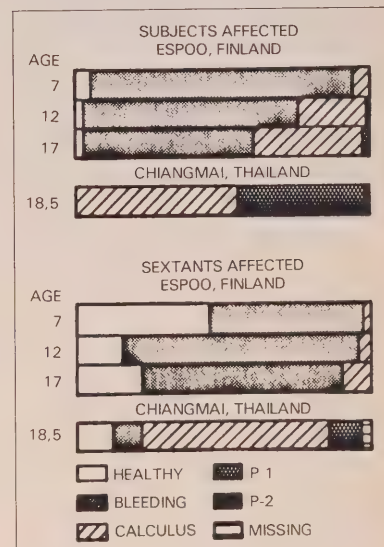


Fig. 4. Proportions of subjects (top) and sextants (bottom) scoring a maximum CPITN code of 0, 1, 2, 3, 4, (or X for missing) in groups of children and teenagers in Espoo, Finland, and Chiangmai, Thailand. In all four groups the proportion of healthy sextants is higher than the proportion of healthy subjects.<sup>14</sup>



observed to move into the category of 1-teeth. The finding, thus, was that the caries activity actually remained the same in spite of the fact that many of the teeth generally considered particularly caries susceptible had already been lost in the oldest age groups.<sup>32</sup>

There should be no doubt whatsoever that adults in the future will be able to retain increasing numbers of their own natural teeth until old age. To date, very little is known about the susceptibility of those retained "new" teeth to both coronal caries and root caries.<sup>33-35</sup> If the caries activity

cannot be controlled in the next generations of elderly adults, the increased number of teeth retained may turn out to be a problem of considerable proportions.

One of the unknown factors in future dental treatment needs is the prevalence and severity of root caries in the elderly population. Recent observations of up to 74 per cent of 17-year-old youngsters having one or more teeth with 0.5 mm or more exposed root cementum due to excessive toothbrushing (Fig. 6), do by no means reduce this risk.<sup>36</sup>

### Future Treatment Needs

At this interesting point of time in the history of dentistry, the situation, admittedly, is slightly confusing. In many European countries the elderly have very few teeth while the young age groups of the population have very few carious lesions. Thus, the dental profession seems to have successfully converted its previously common extraction therapy into an approach of comprehensive prevention. The results of these efforts are now reflected within the population in the form of improved dental health behaviour. The change in sugar consumption patterns, the regular use of fluoride toothpaste, and the ever increasing frequency of daily brushings of the teeth are all signs of improved self care attitudes and active self care measures among the general public.

The increased dental health awareness will in the future lead to an increase in demands of professional dental services, some of which may be related to perceived cosmetic problems and range from orthodontics to regularly repeated professional cleanings of the teeth on one hand and high technology restorative treatments on the other. The main change, however, of which there already is substantial proof available will be the increase in the total number of teeth in the population. According to the epidemiological analyses described above, this means that more teeth will be at risk of decay and that more subjects will be at risk of advanced periodontal disease. There is, thus, little reason to think that reparative dental work will come to an end.

In the U.S., 55 per cent of the age group of 65-74-year-olds was edentulous in 1960-1962 as compared to 45 per cent of the same age group in 1971-1974.<sup>37</sup> The Iowa survey<sup>19</sup> suggested that the percentage of edentates had further decreased to 34 per cent at the same age in the early 1980's. Concurrently, the average number of teeth retained had increased in all age groups.

The new undergraduate students that will be recruited in dental schools this year will be in their peak productivity somewhere in the year 2005. By then, hopefully, children and youngsters have even less oral disease

than today. In the year 2005, today's dentally fit 15-year-olds are 30 years old and enjoy a substantially better dental health than their parents did when they were at that age. The biggest difference, however, will have occurred in the age groups of the elderly.

In all industrialized countries the number of 65-year-olds and older persons will increase each year. The elderly, already in the year 2005, will not only more often have natural teeth and a greater number of retained teeth per person but they will also have higher income and education levels and, correspondingly, greater expectations with regard to dental care (Table 3).<sup>38,39</sup>

Against the background of projected population increases, it seems most likely that the next century's dentist, as the members of most other health professions, will be spending the major part of his time giving dental care to the aged.<sup>40,41</sup> The elderly often have chronic medical condi-

TABLE 1

**In elderly age groups, if prevention fails, a decrease in prevalence of edentulousness may result in an increase in the proportion of subjects needing advanced (code 4) periodontal treatment.**

|                       | AGE | EDENT | CODE 4 |
|-----------------------|-----|-------|--------|
| FINLAND <sup>15</sup> | 65  | 70%   | 8%     |
| SWEDEN <sup>23</sup>  | 65  | 51%   | 13%    |
| NIGERIA <sup>24</sup> | 45+ | 0%    | 53%    |

TABLE 2

**Increasing numbers of teeth (sextants) per person may in 65-year-old or corresponding age cohorts result in an increase in the prevalence of subjects with advanced (code 4) periodontal treatment needs.<sup>19</sup>**

| NO. OF<br>SEXTANTS | N  | CPITN CODE NUMBER |   |    |    |    |  | TOTAL |
|--------------------|----|-------------------|---|----|----|----|--|-------|
|                    |    | 0                 | 1 | 2  | 3  | 4  |  |       |
| 1-3                | 57 | 4                 | 4 | 43 | 31 | 18 |  | 100   |
| 4-6                | 35 | 0                 | 0 | 26 | 31 | 43 |  | 100   |

TABLE 3

**In the U.S., the number of dental visits per person per year did not change from 1963 to 1981 among persons under 65 years of age. Among 65-year-olds and older, the number of visits increased substantially.<sup>38</sup>**

| AGE   | DENTAL VISITS PER PERSON<br>PER YEAR IN THE US |         |      |
|-------|------------------------------------------------|---------|------|
|       | 1963-64                                        | 1978-79 | 1981 |
| 25-44 | 1.9                                            | 1.7     | 1.8  |
| 45-64 | 1.7                                            | 1.8     | 1.8  |
| 65 +  | 0.8                                            | 1.3     | 1.5  |

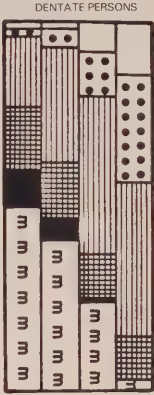


Fig. 5. In a population of Finnish dentate adults, the proportion of missing (m) sextants was 3 per cent at age 25 years (top bar), 25 per cent at age 35 years, 40 per cent at age 50 years, and 50 per cent at 65 years of age (bottom bar). For other explanations, cf. Fig. 4.

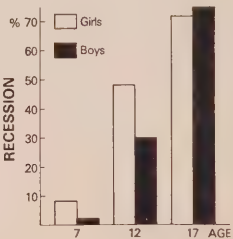


Fig. 6. A minimum of 0.5 mm exposed cementum on one or more teeth was in Espoo, Finland, recorded for up to 74 per cent of 17-year-old schoolchildren. In the Nordic countries, recession of the gums due to excessive toothbrushing appears currently to be the major dental problem at young age.<sup>36</sup>

tions which may affect their oral health and influence their dental treatment. A good knowledge in subjects such as general medicine, pharmacology, psychology and interpersonal skills will be required to obtain patient cooperation and personal satisfaction under such circumstances.

In summary, observations to date suggest that periodontal treatment needs will continue to increase as the clientele ages. Fortunately, it seems that this increase is related to the increase in number of persons with teeth more than to an increase in the amount of disease per person. Maintenance of satisfactory oral health in a substantially increased population of dentate persons is the challenge that the dental profession should start preparing itself for.

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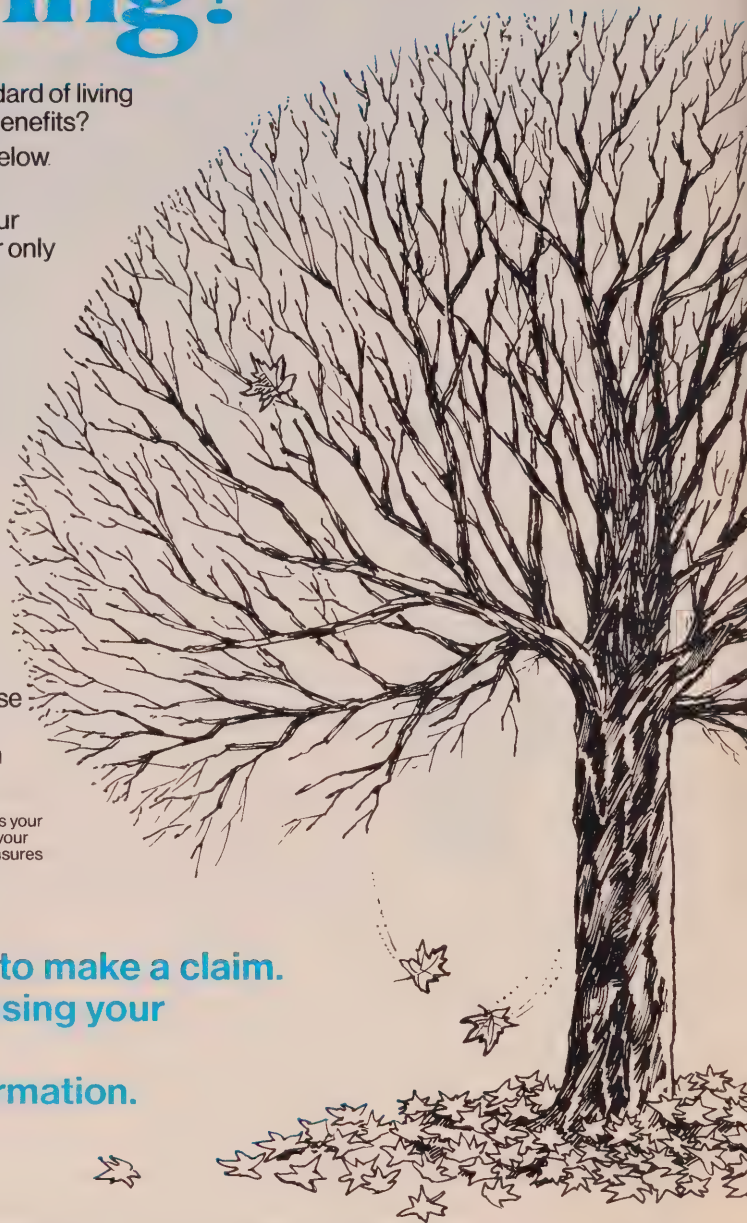
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*Trevor Chin Quee*  
Division of Periodontology  
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### Introduction

**T**he scenario presented by Dr. Ainamo is becoming a familiar one. Dental caries is declining among children, adolescents and young adults. Although there are no reports of improvement in the number of healthy teeth in the 35-44 age groups this group has, however, benefitted from the improved availability of dental care and are thus retaining more teeth. Not only is the adult population retaining more of their teeth but the prevalence of edentulousness is decreasing. In contrast to the caries situation, changes in the prevalence of periodontal disease are not as well documented. This lack of knowledge is partly due to a sparsity of both longitudinal and sequential cross-sectional studies. The feeling is that the gingival health of children and young adults have improved slightly although this improvement has been questioned in some areas. In adults the change, at its best, has been that the portion of subjects with advanced forms of periodontal disease has decreased. In populations that presently have high proportions of elderly subjects, even a decrease in periodontal disease will not result in a decreased need of periodontal care as long as the number of teeth in the age group is increasing. The trends toward lower prevalence of edentulousness and the increase in the average number of teeth per person will for a long time suffice to outweigh any slight improvements in periodontal health. When one considers that our

present population is living longer, that people are retaining more of their teeth, that there is a decrease in edentulousness, that there is very little improvement in the prevalence of periodontal disease among the adult population, that our present and future populations of adults will be more affluent and more dentally aware, one can only conclude that the future for periodontics in the next 20 to 30 years seems very bright indeed.

### Influence of the Changing Disease Patterns on the Periodontal Curriculum

What will these changing disease patterns mean for the future of dentists and more specifically, how will it affect our periodontal curriculum? Dr. Ainamo made the point that future dentists will be spending the major part of their time giving dental care to the aged. Since many of these patients will have chronic medical conditions which may affect their oral health and influence their dental treatment he suggests that students have a good knowledge in subjects such as general medicine, pharmacology, psychology and interpersonal skills. These are areas, however, that most schools are beginning to address with the formulation of a curriculum in geriatric dentistry. During the meeting of the workshop committee it was felt that what we need is not so much a change in direction but a strengthening of the periodontal curriculum.

We have heard Dr. Ainamo predict an increase in periodontal treatment needs. Other researchers<sup>1,2,3</sup> have made similar predictions for both the U.S.A. and Canada. At the present time in dentistry, there is widespread concern over the "decreased busyness" of dental practices. The net effect of both of these factors will certainly be an increase in the amount of periodontal therapy presently being carried out by dental practitioners. Two surveys carried out several years ago indicated that general dentists spent less than 3 per cent of their time on periodontics.<sup>4,5</sup> Christensen (1986)<sup>6</sup> recently published the results of a survey of actively practising dentists in which they indicated the changes they had experienced in the nature of private practice over the past five years. Of over 5000 dentists who replied to the survey, 49 per cent indicated that they had increased the quantity of periodontal procedures carried out in their offices.

We, as periodontal educators, have a great responsibility to ensure that future dentists are well trained to properly diagnose and treat periodontal disease. The question is, are we presently training our students adequately in periodontics? The members of the workshop committee felt that while students were well prepared didactically, they often lacked the skills of examination, diagnosis, treatment planning and scaling and root planing. At a teaching conference on undergraduate periodontics held under the auspices of the A.A.P. in



Atlanta in 1983, the same feeling was expressed. At the N.I.D.R. Workshop on Surgical Therapy for Periodontitis held in 1981,<sup>7</sup> there was a strong recommendation that dental schools expand their curricula in order to "improve the skills of dental students to recognize gingival disease early and to provide expert treatment of periodontally diseased roots".

In 1981,<sup>8</sup> the average number of hours spent teaching the subjects of operative dentistry, fixed and removable prosthodontics and dental materials at all schools in the U.S.A. was 1,623 hours or a total of 35 per cent of the curriculum time. In contrast, the average time spent teaching periodontics was 276 hours or 5.9 per cent of the total curriculum time; this, despite the fact that today periodontal disease remains the major cause of tooth loss among the adult population.

### What Curricular Changes do We Need to Strengthen the Teaching of Periodontics Today?

The disciplines that comprise the field of restorative dentistry have over the years developed fairly sophisticated preclinical programs in which students are prepared for their introduction into the clinical years. Such a system has the advantage of developing and enhancing the clinical skills of students prior to their introduction to the clinical years thus allowing the student to maximize his/her learning during these years. In contrast, pre-clinical programs in periodontics have either been weak or non-existent.

The introduction of a strong pre-clinical program in periodontics has many advantages. Students are introduced to the subject at a time when they are receptive to learning basic procedures. The first two years is a period when students often complain that they seem to spend more time studying subjects unrelated to dentistry. Contrast this to the present custom of introducing basic periodontal procedures for the first time in the clinical years when students have become accustomed to carrying out more complex procedures in other disciplines. The result is an unresponsive and unresponsive student. It is no wonder then that for years dentists have refused to carry out periodontal procedures. During the pre-clinical years students can be taught (i) how to recognize healthy tissue; (ii) the differentiation between healthy and diseased tissues; (iii) examination techniques including the measurement of probing depth, tooth mobility, plaque levels; (iv) all phases of instrumentation and even surgical procedures. In fact the possibilities are endless. The benefits of a well thought out pre-

clinical program will be the delivery of a much more advanced student into the clinical years, more effective use of the clinical years, better appreciation and enjoyment by the students for periodontics as well as a keener interest on the part of the clinical staff who can now get on with the business of teaching students how to treat periodontal disease. It allows the devotion of more time to perfecting diagnostic skills, skills in treatment planning as well as treatment skills. In effect we are increasing the clinical exposure of the student.

### How do We Overcome the Present Overcrowding of the Curriculum?

By now most of you are probably wondering where all this curriculum time is going to come from since we have all heard so much about the overcrowded curriculum. Reed and Mann<sup>9</sup> in 1983 suggested that in light of the declining prevalence of dental caries, a possible solution would be the reduction in the teaching of restorative dentistry with an increase in the time spent teaching both periodontics and orthodontics. Cherrick (1983)<sup>8</sup> went so far as to state that "the continued reduction in the prevalence of dental caries could make the caries-oriented curriculum obsolete within the next ten years". It is obvious from Dr. Ainamo's presentation as well as from others<sup>10,11</sup> that these remarks were a bit premature since the restorative treatment needs of our current adult population will continue at high levels for decades. If the teaching of restorative dentistry is not to be reduced, how then will we find time in the curriculum for a pre-clinical periodontal program? There is no doubt that we will have to find innovative ways to incorporate such a program into the curriculum but this should not deter us from trying.

McGill University has recently introduced a pre-dental year in which some basic science subjects have been moved out of the first year. Students accepted into dental school but who have not previously taken the subjects now offered in the pre-dental year are admitted into that year prior to entering the first year of dentistry. The result of the introduction of the pre-dental year has been the re-distribution of subjects between the first and second years and more importantly, the creation of more time in the curriculum.

In recent years the suggestion has been made that a "fifth year" be added to the curriculum prior to licensure. Invariably the discussion seems to have concentrated on the addition of an extra year at the end of the dental curriculum. The implementation of a fifth year at the end of the dental curriculum would not only be very costly but

would present numerous logistic problems. If this fifth year were to be added at the beginning of the dental curriculum, I suggest to you that while having the same effect of allowing us to better prepare our students, it would not only be less costly but would present much fewer logistical problems.

### Conclusion

In conclusion, it is the workshop committee's belief that in preparing our students for the future, what we need is not so much a change in the direction of our periodontal curriculum but more a strengthening of our present curriculum especially by the introduction of a strong, well thought out pre-clinical program. There is no doubt that we will have to find innovative ways to overcome the present overcrowding of the curriculum but that should not deter us from making a start. One suggestion that schools should consider is the addition of a "fifth year" not at the end but at the beginning of the dental curriculum.

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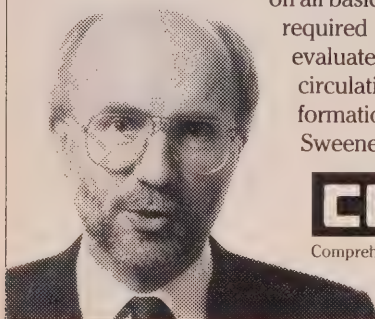
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# Scientific

# ORAL SUBMUCOUS FIBROSIS

## A REVIEW WITH CASE REPORTS

J. Hardie, BDS, MSc, FRCD(C)  
Ottawa

### ABSTRACT

*Oral submucous fibrosis is a disease of the Indian sub-continent which, through immigration has a world-wide distribution. The disease involves a progressive fibrosis of the oral soft tissues with associated restriction in the movement of the mandible, cheeks, lips and tongue. This article reviews the suspected etiology of the disease, employs three case reports to illustrate the salient clinical features and discusses various treatments. It is emphasized that the most serious consequence of oral submucous fibrosis is the development of squamous cell carcinoma in the affected tissues.*

### SOMMAIRE

*La fibrose sous-muqueuse buccale est une maladie originaire du sous-continent indien qui s'est répandue à travers le monde à cause de l'immigration. Elle se caractérise par une fibrose progressive des tissus mous de la bouche, accompagnée d'une restriction des mouvements de la mandibule, des joues, des lèvres et de la langue. Dans cet article, on étudie les causes suspectées de cette maladie et, à l'aide de trois rapports de cas, on en illustre les principales caractéristiques cliniques tout en discutant divers traitements. Il convient de souligner que la fibrose sous-muqueuse buccale a pour conséquence la plus grave le développement d'un épithélioma pavimenteux dans les tissus touchés.*

**O**ral submucous fibrosis is usually associated with the Indian sub-continent and has been reported in Sri Lanka, Malaysia, the Philippines, Laos, Vietnam, Taiwan and South Africa,<sup>1</sup> and recently among the Asian population in Britain.<sup>2</sup> Since immigrants from India and these other countries now reside in Canada, dentists should be familiar with this disease which they may encounter with increasing frequency. This article presents a review of oral submucous fibrosis and describes three clinical presentations of the disease.

### DESCRIPTION

#### General Features

The term oral submucous fibrosis (OSF) is the accepted name for this disease; however, other terms have been used, i.e., atrophica idiopathica (Tropical) mucosa oris,<sup>3</sup> idiopathic scleroderma of the mouth, idiopathic palatal fibrosis and sclerosing stomatitis.<sup>4</sup> OSF has been reported in patients ranging in age from 2 to 87 years,<sup>3</sup> with the peak incidence occurring in the 35-54 age group.<sup>5</sup> Although there are varying reports on the sex ratio, most investigators favour a female pre-



Fig. 1. Case 1: the white blanched, marble-like appearance of the buccal mucosa and the restricted mandibular opening are evident.



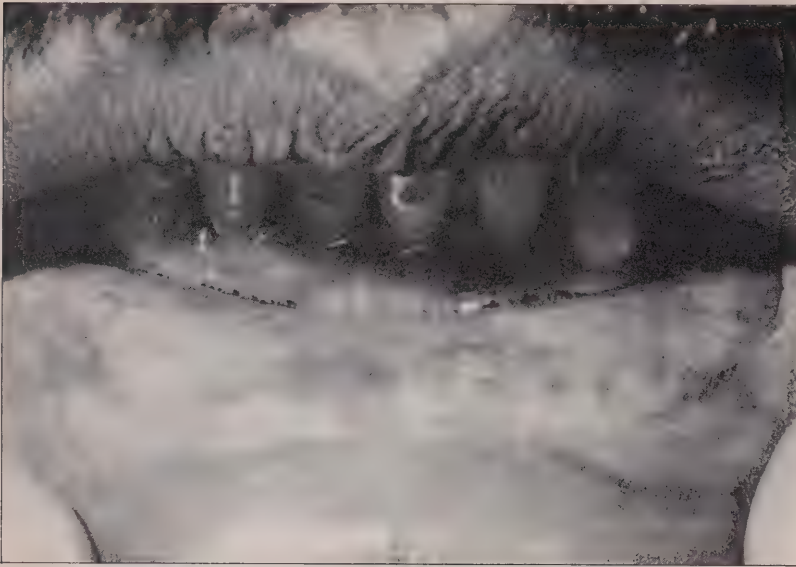


Fig. 2. Case 1: a similar marble-like appearance of the mandibular labial mucosa.

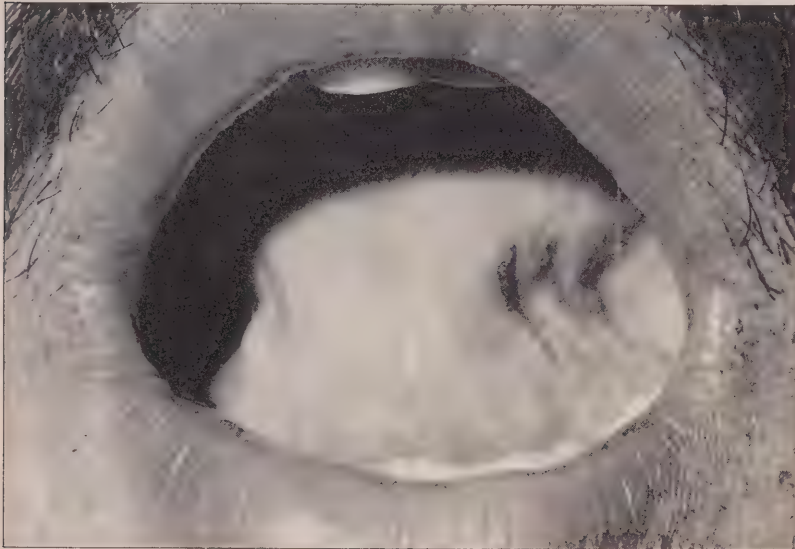


Fig. 3. Case 1: illustrates the restricted protrusive ability of the tongue, with lateral indentations, limited mandibular opening and some pigmentation of the commissures.

dominance.<sup>6</sup> The disease is most common in the Indian sub-continent where there may be as many as 2.5 million sufferers,<sup>7</sup> but immigration has created a world-wide distribution of this disease.<sup>6</sup>

### Etiology

The etiology of OSF remains unknown. The disease occurs primarily in India, among immigrants from Asia ingesting their native foods, and in others consuming an Indian diet. Therefore it has been hypothesized that a relationship exists between dietary habits and OSF.

In southern India and Sri Lanka, chili is

eaten at every meal, either dried, powdered or raw.<sup>8</sup> Capsaicin, the active ingredient of chili peppers, does not consistently stimulate an OSF condition on the oral mucosa of laboratory animals,<sup>6</sup> which tends to eliminate chili as the prime dietary factor.

Betel nut chewing is a common habit in India, usually as an ingredient of "pan".<sup>8</sup> "Pan" consists of betel nut, slaked lime (calcium hydroxide), with cardamon, fennel seeds, coconut shreds and cloves added for flavour. These ingredients are wrapped in a betel leaf and either chewed or placed in a buccal sulcus for many hours.<sup>2</sup> The mixture may be taken before or after a meal,

induces a mild intoxication and is habit forming.<sup>9</sup> Tobacco is a variable constituent, being most common among adult "pan" addicts.<sup>9</sup> The variable ingredients have made it difficult to assess the relationship between betel nut chewing and OSF.

In a recent experiment, Canniff and Harvey<sup>1</sup> demonstrated that ethanolic extracts from the areca (betel) nut induced human fibroblasts to synthesize collagen at a rate 170 per cent above that of control studies. They postulated that the stimulation of the oral mucosa, by betel nut, to deposit collagen is an essential factor in the etiology of OSF. Recent epidemiologic studies by Pindborg et al.<sup>10,11</sup> and by Gupta et al.<sup>12</sup> suggest a relationship between oral habits involving betel nut and OSF. Interestingly, the coastal population of Papua, New Guinea, are habitual chewers of betel nut mixed with lime, and to date have been free of OSF — but have a high incidence of oral cancer.<sup>8</sup>

Nutritional deficiencies, especially of proteins and vitamins (vit. B) and iron deficiency anemia,<sup>2</sup> may play a contributing role in the development of OSF. Most investigators favour the concept that betel nut chewing is a common denominator which induces alterations in the oral mucosa,<sup>8</sup> which in turn may develop into relatively simple irritation keratosis, OSF, or oral cancer, depending on the sensitivity of the tissues and the nature of specific topical stimulants.<sup>8</sup> Laskaris et al.<sup>3</sup> have disputed this hypothesis to some degree, by documenting OSF in an elderly Greek woman who did not indulge in an Indian diet.

OSF has a slow but insidious onset over a number of years. Early symptoms include a burning sensation of the oral mucosa, especially upon consuming spicy foods. There is increasing discomfort and pain usually associated with vesicles and ulcerations of the oral soft tissues. This stomatitis may be recurrent. These early symptoms may be accompanied by an increased salivation which is replaced by a developing xerostomia as the disease progresses, with an increasing stiffness of the oral tissues, trismus, and progressive difficulty in swallowing. There may be earache<sup>8</sup> and deafness<sup>13</sup> depending upon the extent of pharyngeal fibrosis.

The commonly affected sites are the buccal mucosa, soft palate, tongue, labial mucosa, floor of the mouth and uvula.<sup>14</sup> The involved tissues become blanched, opaque, may have mottled red areas and adopt a marble-like appearance. The overlying epithelium becomes stiff and the underlying connective tissue has a hard, board-like feel. Thick fibrous vertical bands may be palpated in the bicuspid area of the buccal mucosa, while a stiff horizontal

fibrous band may be felt around the entire rima oris, especially in the lower lip. There may be a dark brown bilateral hyperpigmentation of the oral commissures.<sup>6</sup> The tongue becomes progressively less mobile and there may be an associated atrophy of the dorsal filiform papilla.<sup>15</sup> The progressive oral fibrosis is usually bilateral and causes an increasing restriction of mandibular opening. Unilateral involvement of a pterygomandibular raphe may produce mandibular deviation.<sup>8</sup>

In a recent report, Pindborg et al.<sup>10</sup> suggested that blanching of the oral mucosa, without palpable fibrous bands, may represent an early stage of OSF.

## Clinical Findings

There are no specific laboratory findings. An increased erythrocyte sedimentation rate is common<sup>6</sup> and normocytic anemia and eosinophilia have been reported.<sup>8</sup> A recent study demonstrated a correlation between the severity of OSF and increasing serum levels of major immunoglobulins.<sup>4</sup>

## Histopathologic Features

OSF has been defined by Pindborg<sup>16</sup> as "an insidious, chronic disease affecting any part of the oral cavity and sometimes the pharynx, occasionally preceded by vesicle formation, always associated with fibrous bands and a juxta-epithelial inflammatory reaction followed by a fibroelastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa, trismus and inability to eat." The inclusion of this definition of specific histopathologic features suggests that affected mucosa should be biopsied to confirm a clinical diagnosis of OSF.

The precise histopathologic features of OSF vary depending on the severity of the disease and the biopsy site. In general, there is a subepithelial chronic inflammatory reaction with the deposition of dense collagen bundles at the epithelial-connective tissue interface. The collagen extends as a progressive fibrosis throughout the connective tissue and skeletal muscle bundles. The epithelial changes may vary from an epithelial hyperplasia (from palatal biopsy sites) to an epithelial atrophy (from buccal mucosa biopsy sites).<sup>17</sup> These changes are accompanied by variable degrees of hyperkeratinization and epithelial dysplasia.<sup>17</sup> In advanced cases with extensive fibrosis, the characteristic feature is epithelial atrophy with loss of rete pegs.<sup>18</sup>

## Malignant potential

The first suggestion that OSF is a pre-cancerous condition was made by Paymaster in 1957,<sup>19</sup> who noticed that one-third of OSF patients developed a carcinoma

in the affected area. In 1972, Pindborg<sup>7</sup> substantiated the hypothesis that OSF is a pre-cancerous condition. A 10-year follow up of OSF patients by Gupta et al.<sup>20</sup> reported cancer developing in 2.3 per cent of patients. A 15-year follow-up by Pindborg<sup>21</sup> revealed a malignant transformation rate of 4.5 per cent. In 1985, Murti et al.<sup>5</sup> reported on a 17-year follow-up which showed a transformation rate of 7.6 per cent. These investigators suggested that further follow-up will probably reveal higher malignant transformation rates, leading to their conclusion that "submucous fibrosis possesses a high degree of malignant potential."<sup>5</sup> Murti et al. noted that the average age for cancer development in OSF patients was 64.6 years, compared to the presence of oral cancer in non-OSF — developing, on the average, at 55 years. This seems paradoxical considering the documented malignant potential of OSF. To support the concept of its pre-cancerous nature, McGurk and Craig<sup>2</sup> recently reported on two female Asian immigrants to the United Kingdom who had OSF and subsequently developed oral cancer.

## Treatment

OSF is considered to be an incurable disease. Cutting of the fibrotic bands to afford some relief from the progressive trismus results in further scarring.<sup>15</sup> Surgical excision of the fibrotic bands and replacement with split thickness skin grafts<sup>22</sup> has proved successful in at least one case. Local corticosteroid (75-150 mg hydrocortisone injected submucously in affected areas once a week for four weeks) has given some temporary relief from burning sensations and trismus.<sup>6</sup> However, a 1985 study by Kakar et al.<sup>23</sup> suggests that local injections of hyaluronidase followed by a combination of dexamethasone with hyaluronidase offers up to two years of relief from burning, ulcers, fibrosis and trismus. Hayes<sup>15</sup> advocates the use of conservative treatment which incorporates vitamin supplements, a balanced diet and stretching exercises, and the cessation of ingestion of suspected irritants. Paissat<sup>8</sup> presents a contradictory opinion: he believes that the conservative approach is difficult to implement in a developing country and that it does not alter the progressive nature of the disease nor its malignant potential.

It appears that OSF does not induce starvation because of the physical limitations on eating, but does promote a liquid rather than a solid diet, and hence the possibility of nutritional deficiencies. The progressive oral fibrosis will be accompanied by increasing difficulty in performing oral hygiene, and associated dental disease must be anticipated.

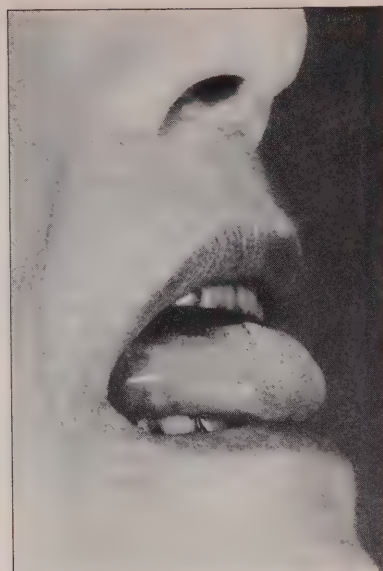


Fig. 4. Case 2: the restricted interincisal opening and limited protrusive ability of the tongue are illustrated. There is a slight hyperpigmentation of the oral commissure.

## CASE REPORTS

### Case 1

A 25-year-old male native of India was referred to the Department of Dentistry, Ottawa Civic Hospital, from the local college which trains dental hygienists, with a request to investigate bilateral leukoplakia of the buccal mucosa.

At examination, the patient stated he had been aware of an increasing burning sensation especially around the gingiva, and a decreasing ability to open his mouth. He had been chewing betel nut and tobacco for at least four years. The oral mucosa was firm and had a glistening, white appearance in the affected tissues, including buccal mucosa (Fig. 1), floor of the mouth, soft palate, lateral borders of the tongue, and labial mucosa of the lips (Fig. 2). Fibrous bands were palpated within the buccal mucosa and lips. With difficulty, an interincisal opening of 30 mm was possible but protrusion of the tongue was restricted and induced lateral indentations (Fig. 3).

A buccal mucosal biopsy revealed epithelial parakeratosis, fibrosis of connective tissue and a chronic inflammatory cell infiltrate at the epithelial connective tissue interface. Based upon the historical, clinical and pathologic evidence, a diagnosis of oral submucous fibrosis was made.

A daily application of corticosteroids to the buccal mucosa was implemented, along with instructions to avoid spicy foods, betel nut and tobacco. After two weeks the patient was aware of a decrease in the burning sensations and an increase in the flexi-



bility of the oral tissues. No additional treatment is contemplated apart from follow up regarding malignant transformation.

## Case 2

A 50-year-old female was referred to the Department of Dentistry from the Division of Dermatology, Ottawa Civic Hospital. The patient was complaining of a two-year history of increasing restriction in mouth opening with increasing soreness on the inside of her cheeks. She was of Indian parentage and had lived in India and Pakistan for 30 years prior to emigrating to Canada 20 years ago. She consumed an Indian diet, including the regular daily use of "pan". Recently she has stopped smoking cigarettes and chewing "pan" because of the increasing oral discomfort associated with their use.

The examination revealed restricted interincisal opening (15-20 mm) and slight hyperpigmentation of the commissures (Fig. 4). Intra-orally, there was an apparent marked thickening and immobility of the buccal mucosa, which had a marbled appearance due to the presence of diffuse white and red areas bilaterally. Definite horizontal fibrous bands could be palpated within the white, blanched, labial mucosa of the lower lip. Her tongue felt normal but had limited movement. Vertical fibrous bands were palpated in the posterior buccal mucosa bilaterally.

A buccal mucosa biopsy revealed focal parakeratosis and acanthosis of the epithelium with fibrosis and sub-epithelial inflammatory cell infiltrate of the connective tissue. A diagnosis of oral submucous fibrosis was made.

The patient was placed on local corticosteroids to provide relief from the sores and burning sensations. She was unaware of any improvement after one month. Regular follow-up assessments have been initiated.

## Case 3

A 56-year-old male immigrant from India was referred to the Division of Plastic Surgery, Ottawa Civic Hospital for assessment of a progressive difficulty in opening his mouth. At examination, the patient had a maximum interincisal opening of 15 cm and a deteriorated dentition, especially of the mandibular anteriors. He admitted to betel nut chewing for many years while residing in India. A buccal mucosal biopsy demonstrated epithelial parakeratosis, loss of rete pegs, connective tissue fibrosis and a juxtapositional chronic inflammatory cell infiltrate (Fig. 5). The pathologic diagnosis was — fibrosis, oral mucosa. The patient has been followed up in the E.N.T. Department for a chronic ear problem.

## Discussion

Although the patient in Case 3 was not seen in the Department of Dentistry, together the cases demonstrate many of the cultural and clinical findings associated with OSF. All of the patients were Indian immigrants who had a habit of chewing betel nut alone or in combination with tobacco (Case 1) and cigarette smoking (Case 2). All cases demonstrated restricted mobility of the oral tissues and histopathologic features suggestive of OSF. Cases 1 and 2 had typical clinical findings, including burning sensations and thick white, immobile oral mucosa with prominent

fibrous bands. Case 2, and to some extent Case 1, demonstrated hyperpigmentation of the oral commissures. The lingual indentations observed in Case 1 are probably due to fibrosis of the tongue. The chronic ear problems in Case 3 may be associated with increasing pharyngeal fibrosis.

To date, patients 1 and 2 have been advised to cease betel nut chewing and the use of tobacco. Topical steroids have given some relief to Case 1 but not to Case 2. None of the patients exhibited evidence of oral cancer but they will be followed up to assess the progress of the disease and its potential for malignant transformation.

## Summary

Oral submucous fibrosis is a condition which appears to have been indigenous to the Indian sub-continent but with emigration has a world-wide distribution. Its etiology has not been established, but the habit of chewing betel nut as an ingredient of "pan" appears to play an essential role in the development of this potentially malignant disease.

The progressively restricted mandibular movements and increasing difficulty in performing adequate oral hygiene may cause such patients to seek the advice of a dental practitioner. The disease is not difficult to diagnose if its historical, clinical and pathologic features are known. At present, the treatment is essentially palliative, with the necessity of regular assessments to rule out developing malignancies in the affected tissues.

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Reprint requests to Dr. Hardie.

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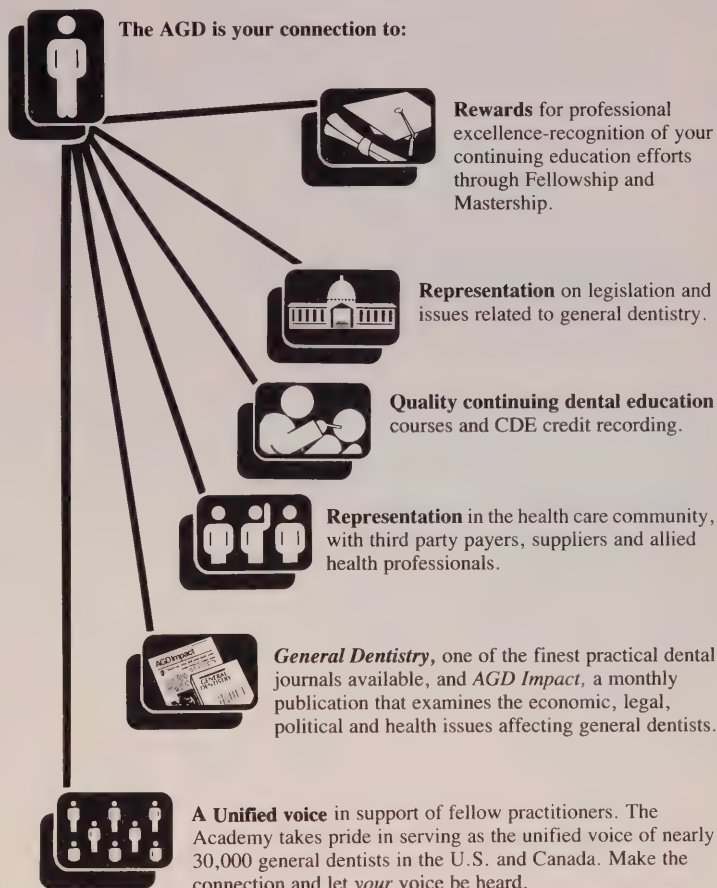


Fig. 5. Case 3: the epithelial thinning, keratosis, loss of rete pegs, connective tissue fibrosis and inflammatory cell infiltrate are illustrated (H & E  $\times$  100).

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# CITRIC ACID BURNISHING

## OF DENTINAL ROOT SURFACES A PRELIMINARY SCANNING ELECTRON MICROSCOPY REPORT

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### ABSTRACT

The integrity of periodontally diseased root surfaces was assessed following root planing to dentine and citric acid application. Three extracted human teeth were vertically sectioned in half, yielding six specimens. A horizontal groove marked the extent of attachment loss. The diseased root surfaces were vigorously root planed to dentine. Cotton pellets, soaked in a saturated solution of citric acid, were either "placed" or "burnished" (vigorously rubbed using root planing pressure) on the prepared root surfaces for five minutes. Pellets were changed three times per minute. The teeth were fractured at the groove and the experimental portion was fixed and prepared for the scanning electron microscope. Photomicrographs of representative areas were taken at various magnifications and analyzed.

Experimental specimens revealed patent dentinal tubules and a very distinct "shag

carpet" appearance of deeply tufted collagen fibrils. Control samples also exhibited open dentinal tubules; however the intertubular surface displayed a characteristic "matted collagen" surface. It is theorized that the citric acid burnishing technique described removes more inorganic material through a combined mechanical/chemical process. The clinical significance of these results is discussed.

### SOMMAIRE

Après le curetage du ciment radiculaire et une application d'acide citrique, on a évalué l'intégrité des surfaces radiculaires dont le parodonte était atteint. On a coupé verticalement en deux trois dents extraites pour obtenir six spécimens. Un sillon horizontal indiquait le degré de perte de l'attachement. On a ensuite "placé" des boulettes de coton imbibées d'une solution saturée d'acide citrique sur les surfaces préparées ou on les a "polies" (vigoureusement frottées comme

pour un curetage) pendant cinq minutes en changeant de boulettes de coton trois fois par minute. On a fracturé les dents au niveau du sillon afin d'en examiner une partie au microscope électronique à balayage. On a pris des photomicrographies des régions représentatives et on en a fait divers agrandissements pour les analyser.

Sur les spécimens d'essai, on a découvert des tubules dentinaires évidents et des fibrilles de collagène disposées en touffes denses et ressemblant très nettement à un tapis à longs poils. Sur les spécimens témoins, on a découvert aussi des tubules dentinaires ouverts; entre les tubules, cependant, on pouvait apercevoir une surface caractéristique de "collagène emmêlé". On suppose donc que le curetage à l'acide citrique tel qu'on l'a décrit enlève plus de matière inorganique à l'aide d'un procédé qui est à la fois mécanique et chimique. On discute l'importance clinique de ces résultats.

### Introduction

Controversy currently exists as to whether demineralization of dentinal root surfaces, when used in conjunction with soft tissue regenerative periodontal procedures, enhances new connective tissue attachment formation.<sup>1-8</sup> Success of such procedures may depend on the splicing together and maturation of the dentinal collagen and soft tissue collagen.<sup>9,10</sup> Initial fibronectin connection of these two collagens with the intervening fibrin clot is thought to be critical.<sup>3,11,12</sup> This initial connection is believed to inhibit the downgrowth of the oral-sulcular epithelium, allowing more time for the formation and maturation of an intact, new connective tissue attachment.

A variety of agents have been used to



Fig. 1 A representative control specimen displays a characteristic intertubular area of "matted collagen" (Bar Scale: 1.96  $\mu$ m).



demineralize root surfaces in studies related to periodontal new attachment.<sup>13-15</sup> Citric acid has received much attention over the past 20 years as the agent of choice.<sup>13,16,17</sup> A number of *in vitro* scanning electron microscope (SEM) studies of citric acid treated root surfaces have been performed.<sup>9,18-22</sup> Each study used up to a three-minute application of citric acid with variations in pH and concentration of the acid solution, type of specimen (human, animal), state of the root surface (healthy, diseased), and type of root surface (dentine cementum). SEM photomicrographs of citric acid treated dentinal root surfaces revealed varying degrees of matted collagen fibrils and enlarged, patent dentinal tubules. Control specimens exhibited an amorphous, irregular surface with no evidence of patent dentinal tubules.<sup>9,19-22</sup>

Miller<sup>23-25</sup> studied the clinical success of soft tissue regenerative periodontal procedures performed in conjunction with root dentine citric acid demineralization. One step in the clinical procedure is the "burnishing" (vigorously rub using root planing pressure) of the dentinal root surface for five minutes with cotton pellets soaked in a saturated solution of citric acid, changing pellets 2-3 times/minute. Miller<sup>25</sup> suggests one reason for his clinical success is that citric acid conditioning removes a "smear layer" from the root surface. In so doing, the dentinal root surface becomes more "hospitable" for cell attachment and subsequent new connective tissue attachment formation.

The purpose of this report is to present preliminary results on the surface topography of the root surfaces following root planing to dentine and citric acid application using a "burnishing" technique.

## Materials and Methods

Three extracted human teeth were selected for this study which met the follow-

ing criteria: 30-50 per cent attachment loss, no endodontic therapy, absence of root caries and restorations. The extracted teeth were sectioned vertically in half, using a circular diamond saw at slow speed with copious water coolant. This yielded three experimental and three control specimens. The extent of the proximal attachment loss was marked by a horizontal groove made by using a #1 round bur in a high speed handpiece and an air/water spray. The diseased root surface was thoroughly root planed to expose dentine, rinsed with a water spray and stored in 10 per cent formalin. At the time of treatment, the specimens were rinsed with distilled water and a saturated solution of citric acid was applied. The saturated acid solution was made by slowly adding anhydrous citric acid to 50 ml of distilled water, using a magnetic stirrer to mix the solution. Crystals were added until no more dissolved into solution. Cotton pellets soaked in citric acid were either "placed" (control) or "burnished" (vigorously rubbed using root planing pressure) (experimental) on the prepared root surface for five minutes. Pellets were changed three times per minute. The teeth were rinsed with distilled water for 30 seconds, fractured at the horizontal groove, and fixed in 2.49 per cent glutaraldehyde (24.9 per cent glutaraldehyde diluted with 0.2M sodium cacodylate, pH = 7.4) for 24 hours at 4°C. The specimens were stored in the 0.2M sodium cacodylate buffer at 4°C. In preparation for the SEM, the specimens were rinsed three times (10 minutes each) in buffer, dehydrated in graded ethanol, critically point dried in CO<sub>2</sub>, then sputter coated with 60/40 gold/palladium. All specimens were examined using a SEM and representative areas were photographed at various magnifications. To prevent bias, the specimens were labeled in a single blind manner.

## Results

The photomicrographs of all three experimental specimens were easily distinguishable from those of the controls. The control specimens showed enlarged, patent dentinal tubules with an intertubular surface characterized by what can be described as "matted collagen" fibrils (Fig. 1). The experimental specimens also exhibited enlarged, patent dentinal tubules with an intertubular surface of what appeared to be deeply tufted collagen fibrils (Figs. 2 and 3). The appearance was not unlike that of a "shag carpet." Occasional bacterial forms were observed on both experimental and control specimens, yet no smear layer was present on either.

## Discussion

A number of histologic studies have shown that the demineralization of dentinal root surfaces enhances new connective tissue attachment formation;<sup>1-5</sup> yet other reports indicate this procedure has no effect on new connective tissue attachment generation.<sup>6-8</sup> It is apparent from the literature that citric acid demineralization of dentinal root surfaces, when used in conjunction with regenerative periodontal procedures, is at present unpredictable in enhancing the formation of new connective tissue attachment.

A number of clinical reports have documented the success of periodontal mucogingival procedures used in conjunction with a citric acid "burnishing" technique to demineralize dentine root surfaces.<sup>23-25</sup> Yet in these reports no controls were used. In studies in which control groups were used, Oles et al.<sup>26</sup> and Ibbott et al.<sup>27</sup> found no difference in the success attained when the mucogingival procedures were performed on untreated or citric acid ("burnished") treated dentine root surfaces. It was concluded that the use of citric acid ("burnished") did not aid in establish-

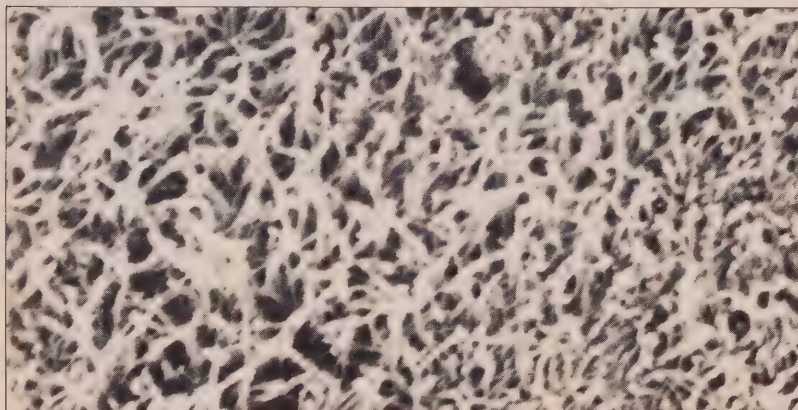


Fig. 2 A representative experimental specimen reveals an intertubular area exhibiting a "shag carpet" appearance of deeply tufted collagen fibrils (Bar Scale: 1.25  $\mu$ m).



Fig. 3 At a lower magnification, the specimen in Figure 2 displays a series of patent dentinal tubules and an abundant area of tufted collagen fibrils (Bar Scale: 19.4  $\mu$ m).



ing more clinical attachment. Yet the histologic nature of the attachment achieved in these latter two studies, whether long junctional epithelium or new connective tissue attachment, is unknown.<sup>26,27</sup> The nature of the dentine root surface after citric acid demineralization may be a critical factor dictating the success of periodontal regenerative procedures.

The current study was undertaken to assess the surface topography of dentine root surfaces demineralized with citric acid using two application techniques: "placed" and "burnished". The citric acid burnished specimens yielded a surface with enlarged, patent dentinal tubules along with a unique intertubular surface of deeply tufted collagen fibrils. Other studies, in which citric acid was "placed" on the root surface, reported finding enlarged, patent dentinal tubules along with an intertubular area of what can be described as "matted" collagen.<sup>9,19-22</sup> This is similar to what was observed in our control group in which citric acid was also "placed". The differences seen in the topography of the intertubular collagen matrix in our test and control specimens may be due to a number of factors, including the citric acid application technique ("burnishing", "placing"), time of application, acid pH, and concentration of the citric acid. Some of these factors are currently under investigation. One factor, the application technique, may be critical to the results presented. The "burnishing" technique described may allow for the mechanical removal of chemically loosened inorganic material. This would expose underlying dentine to the demineralization action of fresh citric acid. The increased application time may further aid this combined mechanical/chemical process, to expose a greater surface area of tufted collagen fibrils.

Although a smear layer was not present on either the control or experimental specimens, our findings of a textured collagen surface may be of greater clinical significance with regards to the success of new attachment procedures. Polson and Proye<sup>3</sup> believe the initial fibrin clot attachment is critical to the generation of new connective tissue attachment. The procedure described here seems to expose a greater area of dentinal collagen, which may contribute to a more intact collagen-fibronectin-fibrin connection. This potentially stronger clot formation may inhibit the downgrowth of oral-sulcular epithelium and allow more time for new connective attachment formation and maturation. In addition, any effect citric acid might have on the collagen should be considered when assessing the reasons for success and failure of regenerative procedures using citric acid treatment of root dentine.

This study was supported in part by a grant from the Dalhousie Faculty of Dentistry Dean's Account No. G720100-608013.

The authors would like to acknowledge Dr. E.J. Sutow, Ms. C. Mason and Ms. M. Wile for their technical help; and Ms. M. Dancause for her secretarial support.

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# FORMOCRESOL CONCERNS

## A REVIEW

Peter L. Judd, BSc, DDS, MSc  
David J. Kenny, BSc, DDS, PhD  
Toronto



Peter L. Judd, BSc, DDS, MSc

### ABSTRACT

*This article reviews the growing data base that implicates formaldehyde as a toxic, allergenic and mutagenic agent. It is clear that formocresol breaks down to reactive formaldehyde that is distributed throughout the body. The evidence proving the toxicity of small quantities of free formaldehyde in humans is less solid. Allergenic and mutagenic properties have been demonstrated in animal models but have not been proven in humans. A cautious re-thinking of the need to use such bioactive chemicals is suggested.*

### SOMMAIRE

*Dans cet article, on passe en revue les données de plus en plus nombreuses qui accusent le formaldéhyde d'être un agent*

*toxique, allergène et mutagène. Il est évident que le formocrésol se décompose en présence du formaldéhyde réactif distribué dans tout l'organisme. Par contre, la preuve que de petites quantités de formaldéhyde à l'état libre chez les êtres humains seraient toxiques, est moins solide. On a prouvé que la substance possédait des propriétés allergènes et mutagènes chez des modèles animaux mais non chez des humains. On suggère donc la prudence en révisant le besoin d'utiliser pareil produit chimique bio-actif.*

### Discussion

The formocresol pulpotomy is a commonly-used procedure for the treatment of inflamed pulps of primary teeth. Nevertheless, there is a growing concern that formaldehyde, a component of formocresol, may pose a health hazard.<sup>1-3</sup> The formocresol pulpotomy, first introduced in 1904,<sup>4</sup> is clinically successful and has been accepted by the dental profession largely on an empirical basis. The "carte blanche" acceptance of this technique and its appropriateness are now being challenged by dentists and other scientists.

Formaldehyde has been demonstrated in the blood vascular system following experimental formocresol pulpotomy procedures.<sup>5</sup> This fact, and the high reactivity of this chemical in a biological system, lead to a number of potential hazards. Toxicity is a minor consideration since the quantities used are very small. The production of foreign protein, due to direct contact with collagen, enzymes and contents of the blood



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vascular system, allows a sensitization potential of unknown significance. Finally, the demonstrated interaction of formaldehyde with the genetic material of cells has shown its mutagenic and carcinogenic potential.

Since most formulations of formocresol contain approximately 19 per cent formaldehyde,<sup>6</sup> the significance of these studies is obvious. This review will reassess the literature pertaining to the use of formocresol, a time-honoured medicament for the treatment of pulp exposures of primary teeth.

### Chemical interactions

The proprietary formulation of formocresol contains 19 per cent formaldehyde,



35 per cent tricresol, glycerin and water.<sup>6</sup> It has been reported, however, that some formulations may contain up to 35 per cent formaldehyde,<sup>1</sup> which is the simplest form of the aldehydes and has the molecular formula of HCHO. It is an essential intermediate metabolite in the mammalian biosynthesis of purine, thymine, histidine and serine,<sup>7</sup> and is rapidly metabolized to formic acid, carbon dioxide and metabolites involved in amino acid formation.<sup>8</sup> This breakdown occurs mainly in the liver but also takes place in the erythrocytes, brain, kidney and muscle.<sup>9</sup>

## Toxicity

Toxic levels of formocresol produced cardiovascular changes, alterations of both plasma and urinary enzymes and histological changes in kidney, liver, lung and heart tissue of dogs.<sup>10</sup> The kidney was identified as the site that appeared most susceptible to potential injury. Small quantities used in the pulpotomy technique have also demonstrated widespread distribution in rats.<sup>11</sup> In addition, there is a paucity of information on the duration or reversibility of such toxic reactions in humans. The toxicology literature on formaldehyde is extensive and covers hepatotoxicity<sup>12</sup> and allergenicity<sup>13</sup> of formocresol usage as well as inhalation, and acute and prolonged exposure effects. Obviously, as exposure to formaldehyde increases, so does the risk of health hazard. Johannsen and colleagues<sup>14</sup> recently reported little change as the result of oral exposure to formaldehyde in rats and dogs.

## Allergic Effects

Formaldehyde is strongly implicated in human skin sensitization. In view of the large number of formaldehyde-containing products in use, it has been included in the diagnostic screening of patients with eczematous dermatitis.<sup>15</sup> One case of sensitivity to newsprint was shown to be due to the presence of small quantities of formaldehyde in the paper. The patient had a history of earlier sensitization to formaldehyde in a high school biology class.<sup>16</sup> To date, formaldehyde appears to be a weak lung sensitizer. The few reports of asthma or asthma-like symptoms are all from workers in industries such as embalming or tanning, where they are exposed to significant quantities of formaldehyde.<sup>13</sup> Rolling and Thulin<sup>17</sup> performed patch tests on a sample of children who had previously had formocresol pulpotomies. Their study demonstrated no increase in positive reaction in 128 children tested. On the other hand, a study by Block et al<sup>18</sup> showed that formocresol can produce antigenic activity in dog pulp tissue. The mechanism of formocresol reactivity with amino groups such

as lysine that are present in protein chains is well recognized.<sup>13</sup> The "new" foreign protein may then initiate a cell-mediated immune response. Finally, the cells and tissues of the young are generally more prone to chemical effects than those of adults.

## Carcinogenesis and animal studies

Agents that have the capacity to damage DNA, leading to neoplastic transformation, are called "initiators". Other agents that are nongenotoxic, but cause cellular toxicity and regenerative proliferation with a promotional effect on carcinogenesis are called "promoters". Formaldehyde is believed to be an initiator with a slight promoter effect.<sup>9</sup> It is generally believed that a mutagenic-like event is the ultimate mechanism of neoplastic transformation. Formaldehyde has been demonstrated to be mutagenic in some bacteria<sup>2,19</sup> and the fruit fly, *Drosophila melanogaster*.<sup>20</sup> Mammalian cell *in vitro* studies demonstrated unscheduled DNA synthesis induction in HeLa cells in response to formaldehyde.<sup>8</sup> Forward mutations have also been produced by formaldehyde in a human lymphoblastoid cell line.<sup>21</sup>

Cell proliferation appears to be an essential component of the pathogenesis of neoplasms.<sup>22</sup> Formaldehyde increases the rate of cell turnover in respiratory mucosa.<sup>23</sup> Swenberg<sup>24</sup> demonstrated that formaldehyde vapour will induce nasal squamous cell tumours in rats. Increased rates of cell replication put the DNA double helix at increased risk as its inherent stability is compromised during the time it is separated for cell division. It is during this time that the number of DNA sites available for reaction with formaldehyde may significantly increase.

## Formocresol pulpotomy technique

The formocresol pulpotomy was first introduced by Buckley.<sup>4</sup> Studies by Sweet<sup>25</sup> led to the technique's acceptance as a standard treatment modality. Sweet initially advised that the formocresol be left in contact with the pulp canal tissue for 2-3 days before restoring the tooth. Today the vital pulpotomy is most frequently completed in one appointment.<sup>26</sup> It is recommended that a cotton pledget containing one-fifth drop (4.86 mg) of formocresol<sup>27</sup> be kept in contact with the pulpal tissue for five minutes.<sup>26</sup> Zinc oxide and eugenol (ZOE) is then placed over the root canal openings. Some clinicians still advocate the placement of a drop of formocresol in the ZOE, but this practice is no longer favoured.<sup>28,29</sup>

## Concern for the technique

Proprietary 19 per cent formocresol remains the agent of choice for pulpotomies of primary teeth.<sup>1</sup> A recent study by Pashley and colleagues<sup>5</sup> has demonstrated, however, that formaldehyde rapidly spreads systemically following topical application of formocresol to the dental pulp. It is also apparent from *in vitro* studies that formocresol diffuses from the pulps of treated teeth over a longer time period.<sup>30,31</sup>

Dankert et al<sup>31</sup> treated extracted, caries-free intact anterior and premolar teeth with formocresol and then placed them in an Agar medium inoculated with *S. epidermidis*. Zones of growth inhibition were observed to increase with increased quantities of formocresol used. This study also demonstrated that formocresol did not remain within the root canal beyond three days. Ranly et al<sup>28</sup> showed *in vitro* that up to 80 per cent of labelled 3H-formaldehyde is lost from the zinc oxide-eugenol cement used to obturate root canals.

*In vivo* studies have also demonstrated that formocresol passes beyond the confines of the tooth. Pashley and colleagues<sup>5</sup> performed 16 pulpotomies on each of two dogs and demonstrated a wide systemic distribution of 14C-formaldehyde. Bound 14C-formaldehyde was found mainly in the liver, with the balance in the kidney, heart, spleen and lungs. It was determined that 5 to 10 per cent of the 14C-formaldehyde placed in the pulpotomy site was absorbed systemically. Myers et al<sup>32</sup> performed five-minute pulpotomies (number not stated) on primary and permanent molars of five Rhesus monkeys using 14C-formaldehyde. Systemic absorption was approximately one per cent of the quantity placed in the tooth.

Systemic distribution following formocresol pulpotomies is established in animal studies and *in vitro*. The mutagenicity and carcinogenicity issue must be considered even though the risk is incalculable. Most regulatory decisions are based upon carcinogenicity tests using animal models.<sup>33</sup> In the absence of human data, a positive, valid, animal bioassay provides presumptive evidence for human carcinogenic risk.<sup>9</sup> Large numbers of animal carcinogenicity tests have shown the nature and extent of positive evidence to vary widely among different chemicals.<sup>33</sup> Furthermore, animal bioassays by themselves can yield ambiguous results, particularly in relation to assessment of human risk.<sup>34</sup> Laboratory animals experience tumour rates that far exceed those at most human sites.<sup>35</sup> The high susceptibility of laboratory rodents to several types of carcinogenic effects is probably due to genetic predisposition.<sup>33</sup> The variation of animal susceptibility to carcino-



gens adds further uncertainty to potential human effects. Finally, animal models do not consider interspecies differences for given biological responses nor is there a sound biological basis to use these models to predict the actual risk levels for the human population.<sup>9</sup> As well as the unknown quantities of formaldehyde released to the blood vascular tissue in the formocresol pulpotomy technique, there is much that is not "scientific" in the science of determining carcinogenicity. A re-evaluation of carcinogen testing has been suggested especially in the light of its use in regulating medications.<sup>9,33,34,36</sup>

Local effects of formocresol usage have ranged from irritation of the periapical area in humans<sup>37</sup> to toxic effects on periapical tissues in primates<sup>38</sup> and dogs.<sup>39</sup> As well, Jerrell and Ronk<sup>40</sup> have described the arrested development of a bicuspid following the use of formocresol in a primary tooth. Recently, Grundy and co-workers<sup>41</sup> have described a cyst that appears to be associated with primary teeth treated with formaldehyde-containing products. One other case report suggested that aberrations of eruption could be a result of the formocresol pulpotomy technique.<sup>42</sup>

Clinical studies have demonstrated other effects of primary formocresol pulpotomies on the permanent dentition. Pruhs and colleagues<sup>43</sup> studied the permanent successors to 159 primary teeth that had formocresol pulpotomies. They found a significant difference between the treated and non-treated sides of their patients. A comparison of affected surfaces showed enamel defects on the labial and occlusal surfaces of the permanent teeth to be highly significant compared with the controls. Another study showed similar enamel defects, but demonstrated that the stage of development of the permanent tooth was an important factor.<sup>44</sup> On the other hand, a study by Rolling and Poulsen<sup>45</sup> showed no relationship between the use of formocresol pulpotomies in primary teeth and the permanent successors.

## State of the Literature

Recent reviews by Teplitsky and Grieman,<sup>6</sup> Lewis and Chestner<sup>1</sup> and in Ingle and Taintor<sup>26</sup> describe the history and technique of the formocresol pulpotomy in the primary dentition and the mutagenic and carcinogenic potential of the chemicals used. Nevertheless, the formocresol pulpotomy is the standard for treatment of inflamed primary teeth.<sup>26</sup> Its success rate is very high, yet Rolling et al<sup>46,47</sup> and Willard<sup>48</sup> conclude that the purpose of this technique is merely to keep primary teeth with pulp exposures functional for a relatively short period of time.

We know from animal studies that formocresol pulpotomies produce detectable levels of radioactive formaldehyde in the blood vascular system<sup>5,11</sup> and from *in vitro* studies that formocresol diffuses out of the pulp chamber over a period of days following its placement.<sup>30,31</sup> The small quantities used in the pulpotomy technique probably do not cause any permanent toxic effects on the liver, kidneys or other organs<sup>14</sup> but the quantity of formaldehyde obviously increases with the number of teeth treated and the amount and duration of its use. Studies of the allergic and sensitivity potential have only just begun. The study of Rolling and Thulin<sup>17</sup> is encouraging but more sophisticated tests remain to be done. The widespread use of formaldehyde-containing products that range from clothes to housing materials should caution us against the indiscriminant use of formocresol. We simply do not know if we are sensitizing some of our patients by using formocresol in pulpotomies.

The use of 1:5 dilution of proprietary Buckley's Formocresol<sup>49</sup> and the abandonment of the practice of adding formocresol to the ZOE used to obturate the pulp canal and chamber are well established.<sup>28,29</sup> Local effects can be minimized by these techniques as well. The question of whether the use of formocresol produces changes in the permanent successors is not yet resolved. It is generally accepted, however, that there are often aberrations in the time of eruption.<sup>42,50</sup> Care must be taken to minimize the amount of formocresol used in order to minimize potential local and systemic effects.

Lewis and Chestner<sup>1</sup> clearly state the need to re-evaluate the rationale underlying the use of formaldehyde in view of its known toxic, mutagenic and carcinogenic potential in humans. Although it is impossible to prove a cause and effect relationship in humans between formocresol pulpotomies and carcinoma, the blood-borne distribution of these chemicals and their mutagenic potential in animals and humans has been shown.<sup>5</sup> The vagaries of such testing have been reviewed and the scientific proof of a cause and effect relationship is presently absent.

Clinicians should be aware of a proliferating literature that cautions against the indiscriminate use of formocresol and similar highly-reactive substances commonly used in root canal therapy.

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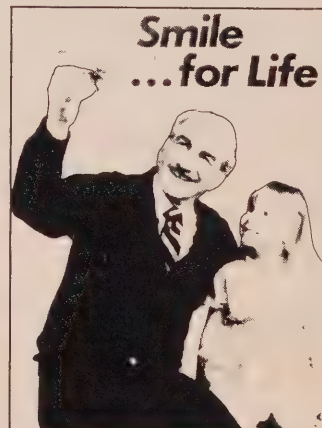
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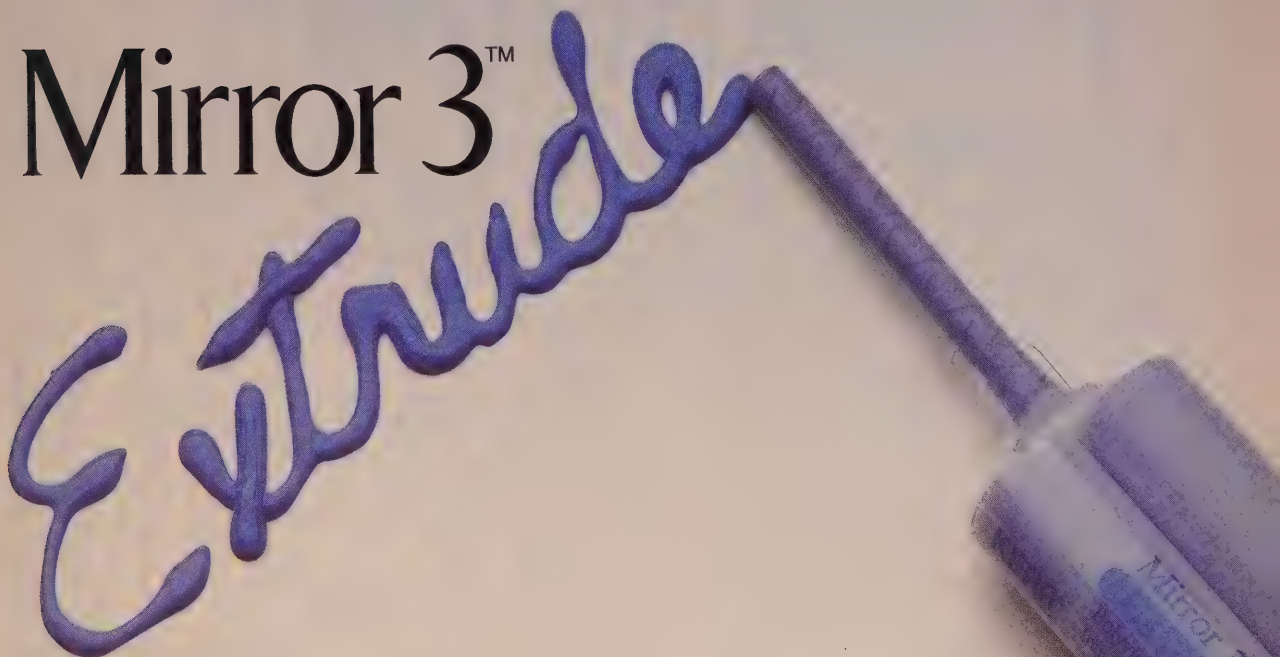
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## PRINCIPES DE CONTRÔLE D'INFECTION EN PRATIQUE DENTAIRE

Michel Lévy, DMD  
Montréal, Québec

### RÉSUMÉ

*Cet article résume certains principes épidémiologiques des maladies infectieuses retrouvées en pratique dentaire et met l'accent sur l'importance de l'utilisation systématique des méthodes de contrôle d'infection.*

### SUMMARY

*Certain epidemiological principles concerning transmissible diseases found in dental practice are reviewed in this article. The importance of routine use of infection control principles is stressed.*

**Mots clés:** Syndrome d'immunodéficience acquise (SIDA), Hépatite B, infection, prévention

**Key words:** Acquired immunodeficiency syndrome (AIDS), hepatitis B, infection, prevention

**L**a prévention des maladies infectieuses en pratique dentaire a suscité beaucoup d'intérêt depuis l'émergence récente du SIDA.

Malgré la gravité extrême de cette maladie, un développement positif est certainement la prise de conscience par de nombreux professionnels dentaires concernant les risques de contamination croisée chez leurs patients ainsi que le potentiel d'infection envers eux-mêmes et leur personnel.

Les plus récentes études épidémiologiques démontrent que pour le personnel traitant, le risque d'acquérir le virus du SIDA (human immunodeficiency virus: HIV) est très minime.<sup>1</sup> Il n'existe à date aucun cas confirmé de dentiste ni de personnel dentaire qui aurait contracté ce virus par contact occupationnel,<sup>2,3,4</sup> mais le risque d'infection est quand même réel, car parmi tous les professionnels de la santé, les dentistes ainsi que certains membres du personnel dentaire sont les plus exposés au contact du sang et de la salive, les confrontant à un risque plus élevé d'acquérir toutes sortes de maladies infectieuses. Ce risque augmente avec le nombre d'expositions et le degré d'agressivité des traitements dentaires.<sup>5,6</sup>

En pratique dentaire, l'hépatite B est considérée comme étant le plus grand risque occupationnel de nature infectieuse, les dentistes étant cinq à 10 fois plus à risque d'acquérir cette infection que le public en

général.<sup>8</sup> Les parallèles entres le virus de l'hépatite B (HBV) et celui du SIDA (HIV) sont bien connues. Les deux virus sont semblables dans leurs modes de transmission et de propagation, mais le HBV est beaucoup plus robuste et infectieux que le HIV. L'expérience a démontré que l'on peut traiter des patients porteurs d'hépatite B sans risque de transmission en se servant de méthodes de contrôle d'infection déjà connues.<sup>6</sup> Ces mêmes méthodes seraient également efficaces pour prévenir la transmission du HIV qui est beaucoup plus fragile que le HBV.

Il existerait au Québec environ 30,000 à 40,000 porteurs d'hépatite B ainsi que plusieurs milliers de personnes qui ont été exposées au virus du SIDA (HIV).<sup>7,8</sup> On estime qu'une pratique dentaire moyenne, qui reçoit une vingtaine de patients par jour, traitera sans le savoir un patient porteur d'hépatite B tous les sept jours ainsi qu'un nombre indéterminé de patients infectés par le virus du SIDA.<sup>8,9</sup> Comme dans d'autres maladies infectieuses, certaines difficultés inhérentes au dépistage du SIDA sont liées au fait que la grande majorité des personnes infectées demeurent asymptomatiques ou hésitent à révéler leur état par crainte de se



voir refuser des soins dentaires. De plus, les techniques sérologiques actuellement disponibles ne peuvent détecter avec certitude la présence du HIV, ni en conséquence la contagiosité d'un individu.<sup>10</sup>

Afin de limiter la propagation du HIV, le dentiste devrait être vigilant face à tous les signes et symptômes de cette maladie ainsi qu'aux manifestations buccales pouvant suggérer la présence du SIDA ou de ses autres formes moins extrêmes (ARC). Une histoire médicale complète doit être obtenue de tous les patients et une mise à jour effectuée sur tout changement de l'état de santé du patient depuis sa dernière visite. Le questionnaire de santé devrait inclure certaines questions spécifiques, qui correspondent aux premiers signes du SIDA, c'est-à-dire une perte de poids récente sans étiologie identifiable, une fièvre persistante inexpliquée ainsi qu'une lymphadénopathie généralisée. Le patient devrait aussi être questionné sur la présence d'infections ou de maladies récentes telles l'hépatite B, et de lésions buccales récurrentes. Une ou plusieurs réponses positives ne signifieraient pas obligatoirement la présence du SIDA, mais pourraient refléter d'autres désordres systémiques qui justifieraient une consultation médicale.

Bien que la transmission du SIDA soit improbable en pratique dentaire, certains patients souffrant du SIDA abritent d'autres microorganismes qui peuvent être transmis par la salive et le sang au personnel dentaire ainsi qu'aux autres patients,<sup>11,13</sup> par exemple, le virus de l'herpès (HSV I & II), le HBV, le virus de la varicelle et le cytomégalo virus qui a une prédisposition particulière pour les glandes salivaires.<sup>12</sup> Des infections bactériennes et protozoaires (salmonella, toxoplasmose, cryptosporidiose) peuvent aussi être présentes. Les femmes enceintes, ainsi que les patients et le personnel immunosupprimés pourraient être plus à risque d'acquies ces infections.

## PRÉVENTION DE LA TRANSMISSION DES MALADIES INFECTIEUSES EN PRATIQUE DENTAIRE

Un protocole type visant le contrôle de l'infection, devrait comprendre des procédures pouvant prévenir la transmission de toutes les maladies infectieuses normalement retrouvées en pratique dentaire. Certaines stratégies supplémentaires seraient indiquées dans le cas de patients souffrant de certaines maladies infectieuses telles l'hépatite B ou le SIDA. Comme le contexte de la pratique dentaire ne permet que rarement l'identification d'un porteur de ces maladies, il est suggéré que les précautions suivantes soient adoptées de façon systématique.<sup>8</sup>

## A) Dépistage (histoire médicale, examen visuel)

Le dentiste et son personnel devraient connaître les facteurs de risques et apprendre à identifier les signes et symptômes évidents de certaines maladies infectieuses (hépatite B, SIDA, herpès, etc.). Si possible, il est préférable d'attendre la résolution de la phase infectieuse avant d'entreprendre des traitements électifs. En attendant, le dentiste devrait demander une consultation avec le département des maladies infectieuses d'un département de santé communautaire (DSC) ou d'un hôpital local afin d'être conseillé sur la meilleure méthode de procéder. Les soins d'urgence devraient être effectués, si nécessaire, tout en suivant des règles très strictes d'asepsie.

### Manifestations bucco-faciales du SIDA

Certaines lésions peuvent se manifester à l'intérieur et autour de la bouche et sont souvent les premiers signes apparents du SIDA. Il se peut donc que par le grand nombre de contacts cliniques, le dentiste soit le premier à identifier un patient souffrant de SIDA.

Les lésions observées le plus fréquemment sont:

**A)** Une candidose buccale inexpliquée sur un adulte en bonne santé sans autre évidence d'immunosuppression. C'est l'infection buccale la plus fréquente reliée au SIDA et au pré-SIDA (ARC).<sup>27,28</sup>

**B)** Des lésions herpétiques récurrentes et extensives sur un adulte en bonne santé qui devraient aussi attirer notre attention.<sup>9,27</sup>

**C)** Une nouvelle lésion jamais observée avant l'apparition du SIDA, et qui a reçu le nom de "leucoplasie pileuse", elle prend la forme de taches ou de plaques blanchâtres épaissies et ridées apparaissant sur les bords latéraux de la langue. Cette lésion peut aussi apparaître dans les formes moins graves du SIDA (ARC).<sup>25,26</sup>

**D)** Le sarcome de Kaposi apparaissant à l'intérieur ou autour de la bouche est presque toujours indicatif du SIDA. Ces lésions ont souvent une apparence bleu-violacée, ecchymotique, mais leur persistance permet de les différencier d'une lésion hémorragique.<sup>9,29</sup>

## B) Barrières protectrices: gants, masques, lunettes, blouse

1. Le personnel clinique doit faire usage de gants pendant tous les traitements dentaires ainsi que durant la manipulation d'instruments et d'articles souillés par la salive et le sang.

2. Porter un masque et des verres protecteurs quand il y a possibilité d'éclaboussures ou de pulvérisation de sang et de salive lors des traitements dentaires, et changer le masque au moins à toutes les heures.

3. Porter un uniforme ou un sarrau propre à chaque jour, l'enlever avant de quitter la zone de travail et le laver séparément des autres vêtements.

4. Couvrir les poignées de la lumière d'éclairage et de l'appareil de radiographie avec du papier d'aluminium ou transparent qui peut être remplacé entre chaque patient.

5. Se servir de la digue de caoutchouc si possible.

## C) Instrumentation

- Stériliser toujours par la chaleur dans la mesure du possible et vérifier périodiquement le fonctionnement de l'appareil à l'aide d'indicateurs commerciaux.

Tout instrument qui pénètre les muqueuses ainsi que la pulpe doit être stérilisé par la chaleur, par exemple les fraises, les curettes périodentaires, ainsi que les instruments chirurgicaux.

- Faire usage de matériel à usage unique autant que possible.

- La désinfection chimique est toujours un deuxième choix. Les instruments qui ne peuvent supporter la stérilisation par la chaleur peuvent être désinfectés par trempage dans un produit "mycobactéricide" pendant la période de temps spécifiée par le manufacturier.

- Nettoyer les instruments en les brossant ou en les immergeant dans un appareil de nettoyage à ultrasons avant la stérilisation ou la désinfection. L'élimination physique des microorganismes est toujours supérieure à une simple immersion dans un produit désinfectant.

Quand le glutaraldéhyde est employé, il doit toujours être rincé à fond afin d'éviter tout contact avec la peau et les muqueuses ainsi que sa pulvérisation (turbine, cavition, caviject). Ce produit est toxique et irritant pour la peau et les voies respiratoires et peut aussi provoquer des réactions allergiques. Un potentiel cancérigène aurait été détecté par certaines études.<sup>14</sup> La glutaraldéhyde ne devrait pas être utilisé sur les articles poreux, comme ceux en caoutchouc (masque à protoxyde d'azote, ouvre-bouche). Si la stérilisation par l'autoclave n'est pas possible, ces articles devraient être frottés avec un savon à base d'iodophore et trempés pour une période de 30 minutes dans une solution d'iodophore (4,5ml/1 litre d'eau).<sup>9</sup>

## Turbine, pièce à main, appareil à ultrasons

Il est préférable de stériliser par l'autoclave la turbine et les pièces à mains entre chaque

patient. Si cela n'est pas possible, il est suggéré de rincer et de brosser la turbine avec un détergent, ensuite de laisser l'instrument tremper dans une solution d'iodophore (4,5ml/1 litre d'eau) pendant la période de temps spécifiée par le fabricant. L'unité devrait être munie d'une valve de rétraction, qui empêche l'aspiration de matériel infectieux. Laisser tourner 20 – 30 secondes entre chaque patient ainsi que deux minutes le matin pour éliminer les débris organiques qui auraient pu être aspirés dans les conduits.

## D) Environnement

### Contrôle des aérosols

L'utilisation de l'instrumentation comme la turbine, les appareils à ultrasons et à air comprimé produit un nuage de particules très contaminantes. On peut minimiser la dispersion de ces aérosols en se servant de la digue de caoutchouc ainsi qu'avec un usage judicieux de la succion rapide.

### Soins des mains

Dans le milieu hospitalier, il a été démontré que le lavage des mains est l'étape la plus importante afin de prévenir les infections nosocomiales.<sup>15</sup> Certaines études récentes rapportent que le personnel traitant néglige fréquemment de le faire.<sup>16,17</sup> Les raisons sont complexes et peuvent dépendre d'un manque de motivation, de l'ignorance de l'importance de l'hygiène des mains, ou encore de l'absence d'un évier accessible ou d'un savon qui soit acceptable. Les savons germicides étant parfois irritants et astringents, provoquent des dermatites sur certaines personnes, ce qui entraîne leur non-utilisation.<sup>15</sup> N'importe quel savon ordinaire est satisfaisant en autant qu'il soit accepté par tout le personnel. Les contenants jetables de savon liquide offrent cependant le moins de possibilité de contamination du savon. Les savons germicides devraient quand même être employés après certains traitements chirurgicaux ou extensifs. Le brossage des mains devrait être évité car les brosses peuvent créer des lésions microscopiques qui offrent un accès aux microorganismes.<sup>18</sup>

Le port de gants est essentiel pour tout acte dentaire. Les mains doivent toujours être lavées avant de mettre les gants ainsi qu'après les avoir retirés. Il a été suggéré que la même paire de gants peut être utilisée dans le cas d'examen ou de visites évaluatrices subséquentes sur plusieurs patients, en autant que les mains gantées soient lavées entre chaque patient. La surface lisse des gants permet d'éliminer efficacement la plupart des microorganismes avec un savon ordinaire. Un savon à base d'iode pourrait réduire davantage la possibilité de contamination croisée.<sup>19</sup>

La réutilisation des gants comporte certains risques pour l'opérateur, puisque des déchirures microscopiques surviennent fréquemment après une intervention dentaire, offrant une porte d'entrée aux microorganismes.

Dans le cas de traitements dentaires conventionnels, il est préférable de changer de gants entre chaque patient.

Idéalement, le contexte clinique devrait prévoir le minimum de contacts avec les mains car celles-ci offrent la plus grande possibilité de recontamination de l'environnement. L'intervenant devrait éviter le contact des mains avec l'environnement pendant et après les traitements.

Les intervenants souffrant de lésions infectieuses aux mains (herpétiques, etc.) ou de dermatites exsudatives devraient éviter tout contact avec les patients ou avec l'équipement jusqu'à la guérison de ces lésions.

### Surfaces de travail

Toute surface de travail contaminée (tiroirs, comptoir, unité), doit être désinfectée à l'aide d'une solution d'eau de javel (hypochlorite de sodium) diluée dans cinq parties d'eau, ou bien d'iodophore, (4,5ml/1 litre d'eau). La solution peut aussi être vaporisée sur les surfaces pour être ensuite essuyée. De même, tout épanchement de sang doit être essuyé immédiatement et les surfaces touchées désinfectées. Afin d'éviter les effets corrosifs de l'eau de javel, l'iodophore serait indiqué sur les surfaces métalliques et les interrupteurs, ainsi que sur les surfaces de plastique recouvrant la chaise dentaire.

### Élimination des déchets

Tout matériel contaminé par la salive et par le sang doit être placé dans un sac bien identifié. Les aiguilles doivent être jetées dans un contenant aux parois rigides lequel serait identifié comme matériel contaminé.

### Prévention des blessures

Certaines études ont montré que le risque d'acquérir une infection d'hépatite B suivant une blessure unique par une aiguille infectée se situerait entre six et 30 pour cent, tandis que pour le SIDA, ce risque est bien en dessous de 1 pour cent. Le personnel devrait être entraîné à prendre des précautions exceptionnelles afin d'éviter les blessures. Les aiguilles ne doivent pas être replacées à l'intérieur de leur couvercle. Les fraises montées sur la turbine et la pièce à main sont une autre source habituelle de blessures.

Il a été démontré que tous les intervenants dentaires sont à risque élevé d'acquérir l'hépatite B, même ceux n'ayant pas de contacts cliniques directs avec les patients. Il est donc fortement recommandé que tout le personnel dentaire et paradentaire soit immunisé contre l'hépatite B.<sup>20</sup>

## Désinfection du matériel à être expédié et provenant du laboratoire

Toute empreinte, prothèse ou modèle de plâtre à être expédié ou provenant du laboratoire doit être rincé et désinfecté avec une solution tuberculocide comme l'hypochlorite de sodium en dilution 1:10 ou d'iodophore (4,5cc/1 litre d'eau). Un rinçage subséquent devrait toujours suivre la période de désinfection.

Il existe un manque de documentation concernant les techniques de désinfection des matériaux dentaires utilisés pour la prise d'empreinte et la confection des prothèses. La grande variété de ces matériaux sur le marché exige que le fabricant soit consulté relativement à la stabilité de ces produits vis-à-vis les méthodes de désinfection.<sup>6</sup>

Généralement, il est suggéré que les empreintes ne soient pas exposées à des solutions chimiques pour une période excédant 30 minutes. Les modèles de plâtre peuvent être désinfectés en les vaporisant d'une solution d'iodophore (4,5ml/1 litre d'eau).<sup>20</sup>

L'utilisation du glutaraldéhyde n'est pas recommandée sur les empreintes et les modèles de plâtre. Du à leur porosité, ces matériaux absorbent la solution désinfectante et peuvent causer des réactions allergiques ou toxiques sur le personnel manipulant ces articles, même s'ils ont été bien rincés.<sup>14</sup>

L'hypochlorite de sodium est corrosif pour certains alliages tel le chrome-cobalt; une exposition prolongée ou une concentration trop forte peut aussi décolorer les prothèses en acrylique.

En l'absence de documentation valable sur ce sujet, il semblerait que dans le doute, l'iodophore serait le désinfectant de choix pour le matériel à être expédié ou provenant du laboratoire.

## Les précautions additionnelles suivantes doivent être prises dans le cas de patients atteints d'hépatite B, de SIDA ainsi que d'autres maladies infectieuses:

1. Tout matériel ou instrumentation possiblement contaminé par des patients dont on soupçonne la présence de maladies contagieuses doit être décontaminé, préférablement par l'autoclave avant de les frotter ou de les tremper dans un appareil de nettoyage à ultrasons. Il est suggéré de stériliser les déchets avant d'en disposer.

2. La stérilisation par la chaleur sèche, par l'autoclave ou par la vapeur chimique doit être employée pour tous les instruments et matériaux qui supportent ces méthodes de



stérilisation. Si cela est impossible, on doit se servir de la "stérilisation à froid" c'est-à-dire, l'immersion pendant 10 heures dans une solution de glutaraldéhyde 2 pour cent, selon les recommandations du manufacturier.

3. L'emploi de matériel à usage unique est fortement recommandé pour tout équipement qui ne supporte pas la stérilisation.

4. Tous les articles souillés par le sang ou la salive de patients atteints de SIDA ou d'hépatite B devraient être placés dans un sac de double épaisseur étiqueté "Précaution Sang" avant d'être expédié pour recyclage ou à l'élimination des déchets. On peut aussi se servir d'un sac d'une couleur prédéterminée pour identifier le contenu infectieux. L'incinération est la méthode de choix pour l'élimination des déchets.

5. Toute surface de travail non utilisée devrait être recouverte de draps jetables, ou de plastique transparent. Les surfaces de travail contaminées devraient être nettoyées suivant la même méthode suggérée précédemment.

6. Éviter ou réduire au maximum l'usage de la turbine, des appareils à air comprimé ou à ultrasons, afin de minimiser la dispersion de particules aériennes.

## Discussion

Tous les ans, deux millions de patients aux États-Unis acquièrent des infections dans les hôpitaux, causant la mort de 20,000 d'entre eux.<sup>21</sup> Les données épidémiologiques dans le milieu hospitalier sont facilement accessibles tandis que dans le contexte dentaire, la mobilité des patients ainsi que les périodes variées d'incubation de certaines maladies infectieuses rendent rarement possible l'établissement d'un lien spécifique entre une visite dentaire et une infection subséquente. Conséquemment, beaucoup d'intervenants ne seraient pas conscients du potentiel réel d'infection dans leur pratique.

Bien que le risque de transmission semble plus probable de patient à dentiste que de dentiste à patient, huit éclosions d'hépatite B, dont une qui atteignit 55 personnes, ont mis en cause des dentistes.<sup>8,22</sup> Une épidémie qui causa la mort de deux patients fut attribuée à un dentiste qui, sans le savoir, était un porteur actif.<sup>23</sup> Il a été suggéré dans ce dernier cas, qu'un brossage des mains trop vigoureux, causant des micro-lésions, aurait pu contribuer à la transmission virale. D'autres infections telles l'herpès peuvent être transmises de patient à opérateur et vice-versa. Un cas cité dans la littérature implique un(e) hygiéniste dentaire qui aurait contaminé 20 de ses 46 patients en l'espace de quatre jours. Dans tous les cas documentés, l'intervenant ne portait pas de gants.<sup>24</sup>

## Conclusion

Afin d'encourager son utilisation, un protocole de contrôle d'infection devrait être efficace et comprendre un minimum d'étapes ainsi qu'un coût acceptable. Le contexte dentaire, devenant de plus en plus complexe exige qu'une réévaluation continue soit faite concernant les méthodes employées. Certaines recommandations sont basées sur des études bien documentées tandis que d'autres en l'absence de données scientifiques s'appuient sur une rationale raisonnable. Le rôle du jugement professionnel de l'intervenant est essentiel quand il s'agit d'adapter ces méthodes aux besoins particuliers de sa pratique.

### REMERCIEMENTS

L'auteur tient à remercier le Dr Jean Robert, MD, MSc, FRCP, chef du DSC de l'hôpital St. Luc, pour sa précieuse collaboration à la rédaction de cet article.

Le Dr Michel Levy est dentiste au programme de santé dentaire du Département de Santé Communautaire de l'hôpital St. Luc.

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# Announcements

## MAY/MAI

**May 1: Practice Management Seminar** presented by the Alpha Omega/Mount Royal Dental Society. A One Day Annual Scientific Limited Attendance Course given by Dr. Jean-Noël Lavallée. Contact: Dr. Ronald Fisher, 132 Aldred Place, Montréal, Québec, H3X 3J3 or (514) 876-6917.

**May 4-5: Computers and Communications in the Healthcare Industry**, the Adolphus Hotel, Dallas, Texas. Contact: Carol Every, Frost & Sullivan, Inc. 106 Fulton Street, New York, NY 10038 or 212-222-1080.

**May 7-8: The Maurice and Gabriela Goldschleger School of Dental Medicine of Tel Aviv University** present "New Wave Endodontics", Tel Aviv University, Israel. Contact: Dr. Hart J. Levin, 2006 Bathurst Street, Toronto, Ontario, Canada, M5P 2W6, Telephone: (416) 781-2751 or contact: Dr. Colin Gorfil, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Ramat Aviv 69978, Israel, Telephone: (03) 420551.

**May 7-9: Journées Dentaires de Nice-Côte d'Azur** presents demonstrations and exhibitions on Periodontics/Endodontics/Implant dentistry/Fixed Prosthetics, Nice, France. Contact: Journées Dentaires, 9 rue de la Liberté, F-06000 Nice.

**May 8: Stuffy Noses, Long Faces and Malocclusion:** A Symposium for Otolaryngologists, Orthodontists, Paediatricians and Allergists. AMA Category 1 credits. Contact: Continuing Education, Faculty of Medicine, University of Toronto, Medical Sciences Building, Toronto, Ontario, M5S 1A8. Telephone (416) 978-2718.

**May 10: Impression Technique Update**, Sheraton Centre of Toronto. Dr. Hal Nemetz (Orange, California) lecturer. Fee: AGD members \$125 (includes lunch), non-members \$200. Contact: Dr. Marotta (416) 735-3310.

**May 10-13: Ontario Dental Association 120th Annual Spring Meeting**, Sheraton Centre Hotel, Toronto. Contact: ODA headquarters c/o Diana Thorneycroft, 234 St. George Street, Toronto, Ont. M5R 2P1. 1-800-387-1393.

**May 11: 30th Reunion of the University of Toronto class 5T7.** Contact: James Loucke, 66 Church Street, St. Mary's, Ontario, N0M 2V0. (519) 284-2660.

**May 16-17: International Association for Orthodontics, Western Canada Section annual spring meeting.** Vancouver, B.C. Four Seasons Hotel (tentative). Contact: Dr. Timothy H. Tam, Pediatric Dentistry, 301-745 West Broadway, Vancouver, B.C. V5Z 1J6, 604-872-0444.

**May 17-22: 41st Annual Meeting of the American Academy of Oral Pathology**, Registry Resort, Scottsdale, Arizona. Contact: Dr. Dean K. White, University of Kentucky College of Dentistry, Lexington, KY 40536.

**May 21-24: Congress of the Swiss Dental Association**, Zurich, Switzerland, sponsored by the Swiss Dental Association. Contact: Swiss Dental Association, Hirschengraben 11, 30 Bern, Switzerland.

**May 24-25: International College of Dentists, Canadian Section Dinner, Convocation and Meeting**, Le Château Champlain, 1 Place du Canada, Montréal, Québec. Contact: Dr. W.J. Spence, Registrar, 1 Heath Street West, Toronto, Ontario, M4V 1T2.

**May 24-27: Association for the Care of Children's Health's 22nd Annual Conference**, The World Trade and Convention Centre, Halifax, Nova Scotia. Contact: Conference Registration, 3615 Wisconsin Avenue, N.W., Washington, D.C., 20016.

**May 24-28: CDA/ODQ Convention**, Montreal, Quebec. Contact: Canadian Dental Association, 1815 Alta Vista Dr. Ottawa, Ont. K1G 3Y6. 613-523-1770.

**May 27-30: Guatemalan Dental Society's 33rd National Odontological Conference, Guatemala.** Canadian participation welcome. Contact: External Affairs, Central American Trade Division, Mr. Reg Harris, (613) 996-5460.

**May 27-30: Royal Belgian Society of Dentistry's 8th Triennial Congress**, Casino-Kursaal, Oostende, Belgium. Main theme: Biological balances in the oro-facial area. Contact: Secretariat of the K.B.V.T./S.R.M.D., Avenue de Jette, 165, B-1090 Brussels — Belgium, or (32) — (0)2/426 03 47.

**May 29-31: Sri Lanka Dental Association's annual scientific sessions**, Colombo, Sri Lanka. Contact: Sri Lanka Dental Association, Scientific Sessions, Professional Centre, 275/5, Baudhaloka Mawatha, Colombo 7, Sri Lanka.

**May 29-31: 87th Annual meeting of the Canadian Lung Association and the scientific meetings of the Canadian Nurses' Respiratory Society and the Physiotherapy Section**, The Queen Elizabeth Hotel, Montréal, Québec. Contact: A. Les McDonald, Director, Health Education & Program Services, Canadian Lung Association, 75 Albert Street, Suite 908, Ottawa, Ontario, K1P 5E7. Tel. (613) 237-1208.



**May 29-31: 17th International Meeting on Dental Implants and Transplants**, Bologna, Italy. Contact: G.I.S.I. c/o Prof. G. Muratori, Via S. Gervasio, 1-40121 Bologna, Italy.

**May 30-June 1: Canadian Academy of Periodontology Annual Meeting**, Québec City. Presentations by Dr. Burton Langer, New York and Dr. Roy Page, University of Washington. Contact: Dr. Serge Roy, École de médecine dentaire, Bureau 5564, Université Laval, Ste. Foy, Québec, G1K 7P4.

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## JUNE/JUIN

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**June 6: Intermediate/Advanced Workshop in Clinical Hypnosis**, sponsored by the San Francisco Academy of Hypnosis, Letterman Army Medical Center, San Francisco. Fee: \$100 CE Credit: 7 Units of Category 1 CME credit. Contact: Jan Brooks, 615-27th Street, San Francisco, CA 94131 or (415) 826-0533.

**June 6: Practice Management Seminar** presented by North America's foremost speaker, Dr. Philip Whitener, L'Hôtel, Toronto. Marketing and production, The Systems and Reward of Team-Oriented Dentistry. Contact: The Pride Institute of Management Canada Inc., 4554 Woodgreen Drive, West Vancouver, B.C. V7S 2V2, (604) 925-3453.

**June 7-11: 11th Congress, International Association of Dentistry for Children**, Toronto, Ont. Contact: Secretariat, 11th Congress, IADC, Dept. of Pedodontics, Faculty of Dentistry, University of Toronto, 124 Edward St. Toronto, Ont. M5G 1G6.

**June 11-13: Saskatchewan College of Dental Surgeons annual meeting and convention**, North Battleford, Saskatchewan. Contact: Dr. Glenn Acaster, P.O. Box 503, North Battleford, Saskatchewan, S9A 2Y4, 1-306-445-3422.

**June 11-14: 5th International Congress and 22nd annual Session of the Stomatological Society of Greece**, Hilton Hotel, Athens, Greece. Table Clinics and Video projections included in the programme. Contact: Stomatological Society of Greece, 17 Kallirroes Street, Athens, 117 43 Greece.

**June 12-13: Bio-Research TMJ Seminar**, St. Louis, Missouri. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**June 17-21: 62nd Annual Congress of the European Orthodontic Society**, Madrid, Spain. Contact: Escuela de Estomatología, Ciudad Universitaria, Madrid, Spain.

**June 18-21: University of British Columbia and the College of Dental Surgeons of B.C. 25 Year Celebration and Convention**. Featured speaker: Dr. P.O. Branemark. Contact: The College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, B.C., V6H 3N4. 604-736-3621.

**June 18-22: Asian Implant Academy's 4th International Meeting on Oral Implantology**, Singapore. Contact: Organising Chairman, 4th I.M.O.I., 268 Orchard Road, 5th Floor, Yen San Building, SINGAPORE, 0923.

**June 19-21: 6th International Symposium on Ceramics**, sponsored by Quintessence Publishing Co. Inc. Los Angeles Airport Hilton and Towers, Los Angeles, California. Contact: Quintessence Publishing Co. Inc. 870 Oak Creek Drive, Lombard, Illinois, 60148-6405 or 800-621-0387.

**June 22-24: International Conference on Oral Biology**, Amsterdam, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111 14th Street NW, Suite 100, Washington, DC 20005.

**June 23-26: 93rd Annual meeting of the American Dental Society of Europe**, Hotel Royal Victoris-Jungfrau, Interlaken, Switzerland. Contact: Clive R. Debenham, 1 Harley Street, London, W1N 1DA, England.

**June 23-26: Canadian Long Term Care Association National Conference & Annual Meeting**, Holiday Inn, St. John's, Newfoundland. Contact: Evelyn Neil-House (Newfoundland Hospital and Nursing Home Association) (709) 364-7701 or Alison Bowick (CLS) (613) 237-9837.

**June 26-28: International Association for Dental Research**, the Hague, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111, 14th Street NW, Suite 100, Washington, DC 20005.

**June 26-July 3: Bermuda Dental Association Convention**, Hamilton, Bermuda. There will be speakers on the topics of Restorative Dentistry, Periodontics and stress management and also an excellent

social program. Families welcome. Contact: Dr. Bob Brandon, 85 Lonsdale Drive, London, Canada, N6G 1T4.

**June 28-July 1: Pacific Dental Conference** sponsored by the Pacific Dental Federation and the Alberta Dental Association, Banff Springs Hotel, Banff, Alberta. Featured speakers: Dr. David Garber and Dr. Marwan Abou-Rass. Contact: Dr. N. Zaharichuk, 401-4600 Crowchild Trail N.W., Calgary, Alberta, Canada, T3A 2L6 (403) 286-2600. C.P. Air - Official convention airline. Contact 1-800-268-4704 for special fares.

**June 30-July 4: 8th Congress of the International Association of Dentistry for the Handicapped**, Bergen, Norway. Contact: Dr. Marit Molland, Hjelms 19, N-5032 Minde, Norway.

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## JULY/JUILLET

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**July 1: Applications are being accepted for the Postdoctoral Program Dental Diagnostic Science** at the University of Texas Health Science Center, at San Antonio, for the class beginning July 1, 1987. Contact: Office of the Associate Dean for Advanced Education, The Dental School, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Dr., San Antonio, Texas, 78284.

**July 3-5: British Dental Association Annual Conference**, Scottish Exhibition and Conference Centre in Glasgow, Scotland. Scientific and Social programmes; speakers include Dr. Richard J. Simonsen, Dr. Michael A. Lennon, Professor Bo Krasse and Professor Jens Pindborg. Special rates for accommodation will be offered. Contact: Helen Mackay, Meeting Planner, 64 Wimpole Street, London, England, W1M 8AL.

**July 4-8: Canadian Paediatric Society and l'Association des Pédiatres de la Langue Française conjoint meeting**, The Queen Elizabeth Hotel, Montréal, Canada. Contact: Secretariat: Canadian Paediatric Society, Children's Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario, K1H 8L1, telephone: (613) 737-2728.

**July 6-8: 1st World Congress on Oral Prevention**, Palais des Congrès, Paris. Topics include tooth disease, dental plaque and prevention of oral diseases. Deadline for registration, April 30. Contact: Dixit International, 73, rue de l'Évangile, 75886 Paris cedex 18, France.

**July 10-11: Bio-Research TMJ Seminar,** Toronto, Canada. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**July 17-22: Academy of General Dentistry's 35th Annual Meeting,** Seattle, Washington. The theme is "The Changing shape of Dentistry" and includes a scientific session co-sponsored by the Academy of Dentistry for the Handicapped. Contact: AGD's meeting Dept., 211 E. Chicago Avenue, Suite 1200, Chicago, Illinois, 60611, 312-440-4300.

**July 19-24: First International Symposium on Management of Pain, Stress, Fear and Anxiety,** Tel-Aviv. Topics include Biochemical, physiological and psychological correlates of pain, stress, fear and anxiety and Clinical Management. The official language of the symposium is English. Contact: Program Chairman, Prof. Y. Sharav, School of Dental Medicine, Hebrew University of Jerusalem-Hadassah, Jerusalem, Israel. Telephone: 972-2-446146.

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## AUGUST/AOÛT

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**August 2-8: International Association of Forensic Sciences Triennial Meeting,** Vancouver, B.C. Contact: International Association of Forensic Sciences, 750 Jervis Street, Suite 801, Vancouver, B.C., Canada, V6E 2A9.

**August 21-23: 3rd Annual Symposium of the American College of Oral Implantology,** Kiawah Island Resort, South Carolina. Contact: Margaret M. Jackson, Executive Director, I.C.O.I., P.O. Box 2277, Grand Central Station, New York, New York, 10163. (201) 783-6300.

**August 24-29: Biennial Conference of the New Zealand Dental Association,** Wellington, New Zealand. Contact: Dr. Robert A. Stallworthy, NZDA, P.O. Box 3709, Wellington, New Zealand.

**August 28-29: Bio-Research TMJ Seminar,** Los Angeles, California. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

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## SEPTEMBER/ SEPTEMBRE

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**September 17-19: Canadian Association of Orthodontists Annual Scientific Meeting,** l'Hôtel, Toronto. Scheduled speakers are Dr. Robert Ricketts and Dr. Donald Woodside. Contact: Catherine Anderson-Brown, Canadian Association of Orthodontists, 2175 Sheppard Avenue East, Suite 110, Willowdale, Ontario, M2J 1W8, (416) 491-2886.

**September 17-19: Canadian Academy of Restorative Dentistry Annual Meeting,** Hilton Hotel International, Québec City, Québec. Simultaneous translation program, registrations limited. Contact: Dr. Hubert Gaucher, Dental School, Laval University, Québec, Québec, G1K 7P4, (418) 656-5557.

**September 18-20: The Northern Ontario Dental Association Convention,** Pinewood Park Motor Inn, North Bay, Ontario. Contact: Dr. Gaetan Fournier (705) 472-5300.

**September 21-22: British Society for Oral Medicine's 1st International Congress,** Royal College of Physicians of London, London, England. Contact: Jennifer Nathan, Congress Secretary, B.S.O.M., International Congress, Dept. of Oral Medicine, The London Hospital Medical College, Turner Street, London, E1 2AD, UK.

**September 23-26: Dentechnica Nuremberg 87 - 9th International Congress of Dental Technicians with Specialized Exhibition for Dental Laboratories,** Nuremberg Exhibition Centre, Nuremberg, West Germany. Motto: "precision in dental technology is not a matter of chance". Contact: NMA Nürnberger Messe-und, Ausstellungsgesellschaft mbH, Messezentrum, D-8500, Nürnberg 50.

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## OCTOBER/OCTOBRE

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**October 10-13: American Dental Association Annual Convention.** Las Vegas, Nevada. Contact: ADA office of international affairs, 211 E. Chicago Ave., Chicago, Ill. USA 60611.

**October 22-25: The 15th Expodental and the 2nd Expotechodental,** Milan, Italy, at the Milan Fair. Contact: Expodental, 20123 Milano, via Tamburini 2, ITALY.

**October 24-30: 85th Annual World Dental Congress of the FDI.** Buenos Aires, Argentina. Contact: Dr. R.H. Lemme, Congressos Internacionales, SA, Moreno 584-9e, Piso (1091) Buenos Aires, Argentina.

**October 29-November 1: Canadian Academy of Endodontics Convention,** Toronto, Ontario. Contact: Dr. Martin Gelfand, 487 Lawrence Avenue West, Toronto, Ontario, M5M 1C6.

**October 30-31: Periodontal Restoration Relationship Symposium,** Toronto, Ontario. Clinicians include Dr. Herman Corn, Dr. Myron Nevins and Dr. Kenneth

Malament. Contact: Professional Development, The Ontario Dental Association, 234 St. George Street, Toronto, Ontario, M5R 2P1, (416) 922-3900.

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## NOVEMBER/NOVEMBRE

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**November 5-7: Second District Dental Association of Pennsylvania's Annual Dental conference,** Sheraton-Valley Forge Hotel and Convention Center, King of Prussia, Pennsylvania. Speakers will include Dr. Ronald Goldstein and Dr. R. Sheldon Stein. All day programs, table clinics and special programs. Contact: B.J. Dencler, Conference Coordinator, 1039 Louise Lane, Allentown, Pennsylvania, 18103. 215-820-4062.

**November 9-14: First International Congress on Oral Cancer,** Singapore. Special features include Reconstructive and Microvascular Surgery. Contact: Dr. N. Ravindranathan, First International Congress on Oral Cancer, Dept. of Oral and Maxillofacial Surgery, Faculty of Dentistry, National University of Singapore, Lower Kent Ridge Road, Singapore, 0511.

**November 11-13: First International Congress in Oral Cancer,** Singapore. Special features include Reconstructive and Microvascular Surgery. Speakers include Professor Westbury of Royal Marsden Hospital, U.K. and Professor Hugo Obwegeser of Switzerland. Contact: Dr. N. Ravindranathan, Organizing Secretary, First International Congress in Oral Cancer, Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, National University Hospital, Lower Kent Ridge Road, Singapore, 0511.

**November 26: Toronto Academy of Dentistry's 50th Annual Winter Clinic,** Metropolitan Toronto Convention Centre, 255 Front Street West, Toronto, Ontario. Contact: Academy of Dentistry at (416) 967-5649.

**November 27: Practice Management,** Royal York Hotel, Toronto. Chuck Sorenson, lecturer. Fee: AGD members \$125, non members \$200. Contact: Dr. Marotta (416) 735-3310.

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## OPPORTUNITIES AVAILABLE

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All dentists will receive one placement at no charge with every two consecutive advertisements they run in the classified section of the Journal of the Canadian Dental Association in 1987.



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\*Source: Financial Times  
février 1987



Pour de plus amples renseignements ou pour toute question sur le RER contacter le Service de renseignements du CDSPI, à n'importe quelle heure, sans frais:

**1.800.268.54.18** Provinces de l'Ouest, provinces atlantiques et région de l'Ontario avec l'indicatif régional 807  
**1.800.268.34.11** Québec et Ontario, sauf pour la région avec l'indicatif régional 807  
**197.71.17** Toronto et environs

**RER ADC**

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## OBITUARIES/ NÉCROLOGIES

**ARTHURS, W.:** A graduate of the University of Toronto in 1927, Dr. Arthurs was aged 96 at the time of his death in Hamilton, Ontario.

**BAROOTES, C.W.:** Born in 1923, Dr. Barootes was a graduate of the University of Toronto in 1947. He was practicing in Toronto at the time of his death.

**BEATTIE, P.A.:** A graduate of the Royal College of Dentists of Toronto in 1923, Dr. Beattie maintained a Toronto practice for about 50 years. He served during World War II in the Royal Canadian Dental Corps.

**BRAUND, J.S.:** Born in 1927, Dr. Braund graduated from the University of Toronto in 1950. He was a resident of Peterborough, Ontario, at the time of his death.

**BROOK, M.:** A practicing dentist in Saskatoon, Saskatchewan, for many years, Dr. Brook was a graduate of the University of Toronto in 1944.

**BROSSEAU, E.:** Né en 1895 et diplômé de l'Université de Montréal en 1923, le D<sup>r</sup> Brosseau habitait à Granby (Québec) au moment de son décès.

**CAMPBELL, T.D.:** A Life Member of the Canadian Dental Association, Dr. Campbell was a graduate of the Royal College of Dentists in Toronto in 1916. He was a resident of Kingsville, Ontario, at the time of his death.

**COWBURN, H.R.:** A practicing dentist in Saskatoon, Saskatchewan, for 36 years, Dr. Cowburn was a graduate of the University of Toronto in 1950. He was a past president of the College of Dental Surgeons of Saskatchewan.

**DALEY, N.K.:** Born in 1951, Dr. Daley was a graduate of the University of Western Ontario in 1979. He was practicing in Kitchener, Ontario, at the time of his death.

**GIRARD, D.:** Né en 1920 et diplômé de l'Université de Montréal en 1944, le D<sup>r</sup> Girard habitait à Stukely-Sud (Québec) au moment de son décès.

**GREGORY, P.D.:** A graduate of the University of Toronto in 1980, Dr. Gregory practiced in Kelowna, B.C. following graduation.

**HICKEN, R.F.:** A graduate of the University of Toronto in 1955, Dr. Hicken practiced dentistry in Mississauga, Ontario, in a shared practice with his brother, George.

**L'ARRIVÉE, R.:** Diplômé de l'Université de Montréal en 1957, le D<sup>r</sup> L'Arrivée a exercé sa profession à Hull (Québec), durant plus de 27 ans. Il est décédé à l'âge de 59 ans.

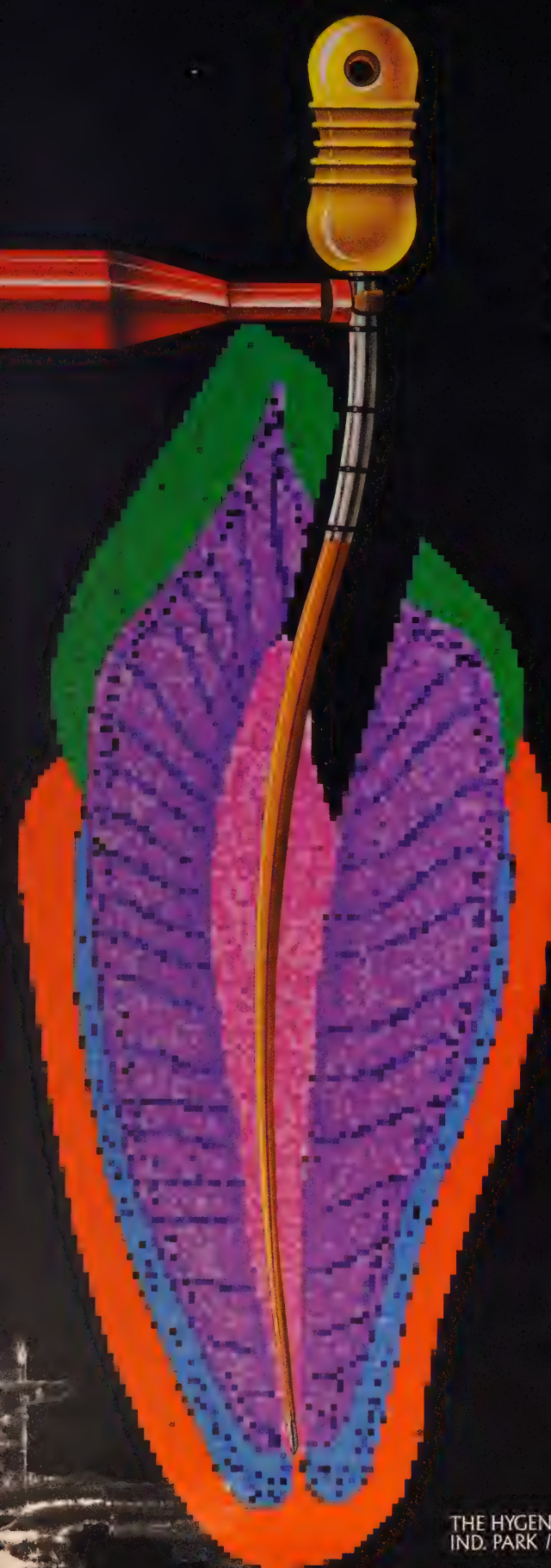
**McKERRACHER, D.L.:** A Life Member of the Canadian Dental Association, Dr. McKerracher passed away recently at the age of 88. He was a graduate of the Royal College of Dentists at Toronto in 1923 and maintained a practice in Arnprior, Ontario, until his retirement.

**McKIBBON, G.L.:** A graduate of the Royal College of Dentists in Toronto in 1922. He was a resident of Mississauga, Ontario, at the time of his death.

**MURPHY, R.B.:** Dr. Murphy was a graduate of Dalhousie University and a resident of Willowdale, Ontario, at the time of his death. He graduated in 1985.

**SEIGEL, E.J.:** A graduate of the University of Toronto in 1951, Dr. Seigel was an Honorary Life Member in the Toronto Academy of Dentistry.

**ZAKUS, P.:** A graduate of the University of Alberta in 1928, Dr. Zakus was born in 1898. He was a respected member of the community in Winnipeg, Manitoba, and maintained a career in dentistry for 49 years.



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# Marketplace

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## OFFICES AND PRACTICES

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### **NORTHWESTERN BRITISH COLUMBIA:**

Busy, high volume, ground floor dental practice for sale for one half year's gross (3 figures). With or without building. Five operatories, Dental Eze chairs, Adtec delivery, Pan, Ceph, Computer control. Turnkey Operation. Owner retiring. Please reply to CDA Box 2353.

### **BRITISH COLUMBIA—False Creek, Vancouver:**

Modern 1400 square feet dental practice, with three operatories, for sale. Located on the bay overlooking city, mountains, and Expo site. Priced for immediate sale. Please contact Dr. Jimmie Walker (604) 874-9388, or Larry Whitehead (604) 687-4800.

### **BRITISH COLUMBIA—Grand Forks:**

Purchase busy high gross-net general practice doing all phases of dentistry. Suitable for 1-2 dentists. Will associate 6-12 months for transfer of patients. May purchase modern 2400 sq. ft. dental building or lease with option. Dr. Mark O'Neill, Box 1120, Grand Forks, BC, V0H 1H0 (604) 442-2177.

### **BRITISH COLUMBIA—Kelowna:**

Opportunity to purchase established, thriving dental practice in professional building. Two fully equipped operatories with room to expand to four. Owner is retiring and willing to assist in transition. Very reasonably priced. Please reply to Dr. Kenneth Geis, #26 1710 Ellis Street, Kelowna, B.C. V1Y 2B5. Telephone days (604) 762-2223, evenings (604) 763-8603.

### **BRITISH COLUMBIA—South Vancouver**

—900 sq. ft. space available immediately. All improvements, some dental equipment and furniture included at no charge. Tremendous referral from eight busy medical practitioners on same floor. Excellent for recent graduates or relocation. Present two dentists moving to larger premises. Call (604) 261-3366 or 266-9888 evenings.

### **BRITISH COLUMBIA—Victoria (Saanich Peninsula):**

Low stress rural, satellite practice for sale. This 1200 sq. ft., 2 operator office, high annual gross with only 1½ days per week. Close to 3 schools with good exposure on main thoroughfare. This practice in a small plaza offers a good opportunity for expansion. Phone (604) 652-9129 or P.O. Box 386, Saanichton, B.C. V0S 1M0.

### **BRITISH COLUMBIA—West Vancouver:**

Well established family practice for sale in prosperous residential community. Contact CDA Box 2361.

### **BRITISH COLUMBIA—North West Central B.C.:**

Successful, well established family practice in beautiful Smithers, B.C. 1400 sq ft, 4 operatories, panelipse, peltoncrane chairs, many extras. Owner returning to graduate school. Superb skiing, fishing, hunting. One hour by jet to Vancouver. Very reasonably priced. Call Dr. Steve Davis (604) 847-9183 (B) or (604) 846-5544 (H) or write box 1057 Smithers, B.C. V0J 2N0.

### **ALBERTA—Edmonton:**

Well established, busy general practice in dual-cost shared downtown professional building. Quality practice, compact, efficient office. Owner relocating. Phone 403-428-7822 or 483-7760 (Eve).

### **ALBERTA: SUPERIOR PRACTICE —**

An Excellent opportunity to acquire a well established, progressive practice in West Central ALBERTA. Potential is limited only by your capability. Suitable for 1 or 2 Dentists and excellent terms for the appropriate candidate. Owner returning to school Fall '87. Call collect (403) 723-6623. Dr. R. Mazurat.

### **ONTARIO—Kitchener/Waterloo:**

Fast growing urban centre *only* 1 hour west of Toronto. TREMENDOUS OPPORTUNITY. Growing family practice for sale. Great location in fast-growing residential neighbour-

hood. Clientele middle to upper class, highly educated. High proportion of families, most with dental insurance. Excellent exposure on busy street, high traffic count. Store front location with good walk-ins. Excellent long-term lease, very low set rate at \$8 per sq. ft., tied in until 1996. Approximately 1300 sq. ft. ultra modern and spacious office, beautifully decorated. Oak trim throughout, custom cabinet, 3 large skylights. Four operatories plumbed, one fully equipped. Modern facility with nitrous-oxide, stereo headphones, colour T.V. suspended above dental chair & VCR for viewing of movie videos by patients during treatment. Plenty of room for expansion to accommodate this fast growing practice. Excellent growth potential with approx. 400 active patients in the first year, with over 30 new patients per month and high percentage of recalls. Books for the past year show above average gross. Financial statements available to serious purchaser. Owner to specialize. Staff will stay. Owner will remain to assure smooth transition. This practice offers unlimited potential, with great financial rewards. No broker fees. For more information, please contact Sue at (416) 746-3435.

### **ONTARIO—Toronto:**

Practice for sale. Store-front location in shopping plaza. Prestigious area with high traffic flow and low overhead with good lease. Dentist leaving country. Call 416-221-0851.

### **ONTARIO—Toronto:**

Office for sale or sublease. (Yonge & Steeles). This professionally decorated 4 ops (1 equipped) office in a plaza location (elevator, TTC at door) is ideal for specialist or general dentist. Contact: Dr. Kushner (416) 495-7633.

### **NOVA SCOTIA—Halifax:**

Established downtown general practice for sale, located in central business district. Sale includes share of modern equipment, sundries, and term lease of office space. Practice includes a large recall clientele, (mostly adult). Suitable for an experienced operator or two graduates. Apply to Box CDA 2327.

**NOVA SCOTIA—Hantsport:** Well-established six year old family practice for sale; modern equipment; sundries included. Two operatories, low overhead. Close to Annapolis Valley; less than one hour drive to Halifax. Phone (902) 684-9884.

**NOVA SCOTIA—Sackville:** Thriving 10 year old practice with approximately 5,000 active patients. Converted three bedroom bungalow plus vacant lot. Three chairs with well maintained equipment. Owner willing to lease back three days per week. Contact Dr. Gordon Gounce, 902-835-5137 (home), 865-7260 (office).

**NEWFOUNDLAND—St. John's:** Well established, ultra modern practice for sale — St. John's area. Excellent location. High gross and net. Please reply to Box #2355.

**NEWFOUNDLAND:** For sale — Busy high gross — net practice. Two operatories and lab. Located in modern medical centre. Busy well equipped satellite clinic. Also included — No charge, super deal for a new graduate or experienced operator. Call (709) 368-9880 after 7 p.m.

## ASSOCIATESHIP AVAILABLE

**NORTHWEST TERRITORIES:** An exciting opportunity exists for a high quality Associate in Yellowknife. Our well established clinic practices all aspects of dentistry utilizing the latest in equipment in a modern spacious environment. Yellowknife, the capital of the Northwest Territories, is a vibrant growing city of 11,000 people offering a unique lifestyle of city amenities, outdoor recreation and opportunities to travel within Canada's last frontier. For more information contact: Dr. Hussain Biati, P.O. Box 1178, Yellowknife, N.W.T., X1A 2N8. Office: (403) 873-4578. Home: (403) 920-2185.

**BRITISH COLUMBIA—Surrey:** ASSOCIATE REQUIRED. Exceptional opportunity available to full time associates starting in June. Busy modern family oriented practice situated 25 minutes from Vancouver. Please contact: Dr. Salim Kamani (604) 584-7710, (604) 538-2997.

**ALBERTA—Edmonton—Associate Required:** Busy downtown solo practice requires ambitious dentist (new grad) to work weekends and some evenings (negotiable). Emergency and family practice located in Mediacentre clinic. Good potential and very relaxed atmosphere. Please contact: Dr. Richard Levin (403) 420-6394.

**ALBERTA—Jasper:** ASSOCIATE WANTED for very busy progressive family practice in Jasper National Park. Excellent opportunity for quality conscious, confident grad, or experienced dentist. Flexible hours to maximize benefits of the area for another outdoor oriented practitioner. Contact: Dr. David W. Regehr (403) 852-4824 Home, (403) 852-3012 Office.

**ALBERTA:** ASSOCIATE REQUIRED — Rare Opportunity — Fully equipped, nicely decorated, modern 6 operatory practice requires full-time associate. Busy family oriented practice in northern Alberta. Phone Dr. E.M. Zysko 1-403-743-5958 (Bus) or 1-403-791-9380 (Res).

**ALBERTA:** Calgary—Board-eligible Endodontist wanted to join busy Endodontic practice as a full-time associate with opportunity for partnership. Reply to CDA Box 2354.

**ALBERTA: OWN YOUR OWN PRACTICE** — Looking for a fast working associate to help with a 2 office, single doctor practice, that has grown too big to handle. Practices are located in Lethbridge area of Southern Alberta, are 5 years old and within one hour travelling time of each other. New building being built for one practice; all equipment state of the art. Either practice for sale after successful associateship established. Contact Dr. Harold Elke: Tue, Thu, Fri (403) 732-5621; Mon, Wed, (403) 647-2482.

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**ONTARIO:** ASSOCIATE wanted for Oral and Maxillofacial surgery practice in Eastern Ontario. Candidate should be certified as specialist in Ontario or should be eligible for specialty certification. Send Résumé to Box 2360.

**ONTARIO:** ORTHODONTICS: Associateship leading to purchase, very busy border city edgewise practice, superb people oriented staff, large TMJ, surgical and cleft patient load. An exciting and rewarding practice. Please reply to CDA Box 2359.

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**NOVA SCOTIA—Halifax:** Associate or cost-sharing partner needed for expanding metro practice. Due to other commitments owner is willing to negotiate mutually beneficial arrangements. Serious inquiries please write to: Dr. Bruce McLaughlin, P.O. Box 876, Dartmouth, N.S., B2Y 2Z5.

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**ONTARIO—London:** Position at rank of Assistant Professor available in Division of Oral Medicine, beginning July 1, 1987. Initial appointment from three to five years' duration, and will be limited term or probationary depending on candidate's qualifications. Applicants should have D.D.S. and M.Sc. (or equivalent) degrees, and should have clinical teaching experience. Duties will include teaching and research, and supervision of Emergency Clinic. Inquiries and applications, which should include a curriculum vitae and names of three referees, should be directed to: Dr. R.I. Brooke, Dean, Faculty of Dentistry, University of Western Ontario, London, Ontario, Canada N6A 5C1. Position subject to budget approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

**ONTARIO—London:** Position at rank of Assistant Professor available in Division of Oral & Maxillofacial Surgery and Hospital Dentistry beginning July 1, 1988. Initial appointment from three to five years' duration, and will be limited term or probationary depending on candidate's qualifications. Applicants should be certifiable in specialty of Oral Surgery and should have Masters degree or equivalent. Duties will include teaching and research, and successful candidate will be eligible for active staff appointment in Oral Surgery at one of local Teaching Hospitals. Inquiries and applications, which should include curriculum vitae and names of three referees, should be directed to: Dr. R.I. Brooke, Dean Faculty of Dentistry, University of Western Ontario, London, Ontario, Canada N6A 5C1. Position subject to budget approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

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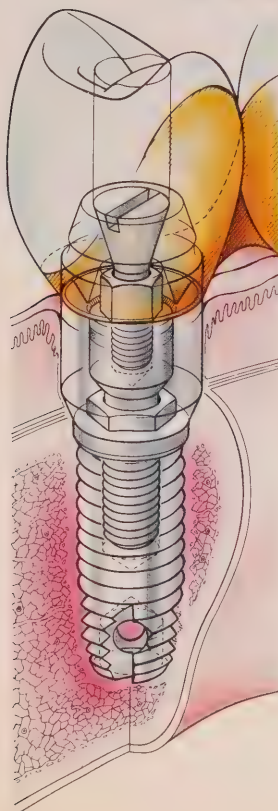


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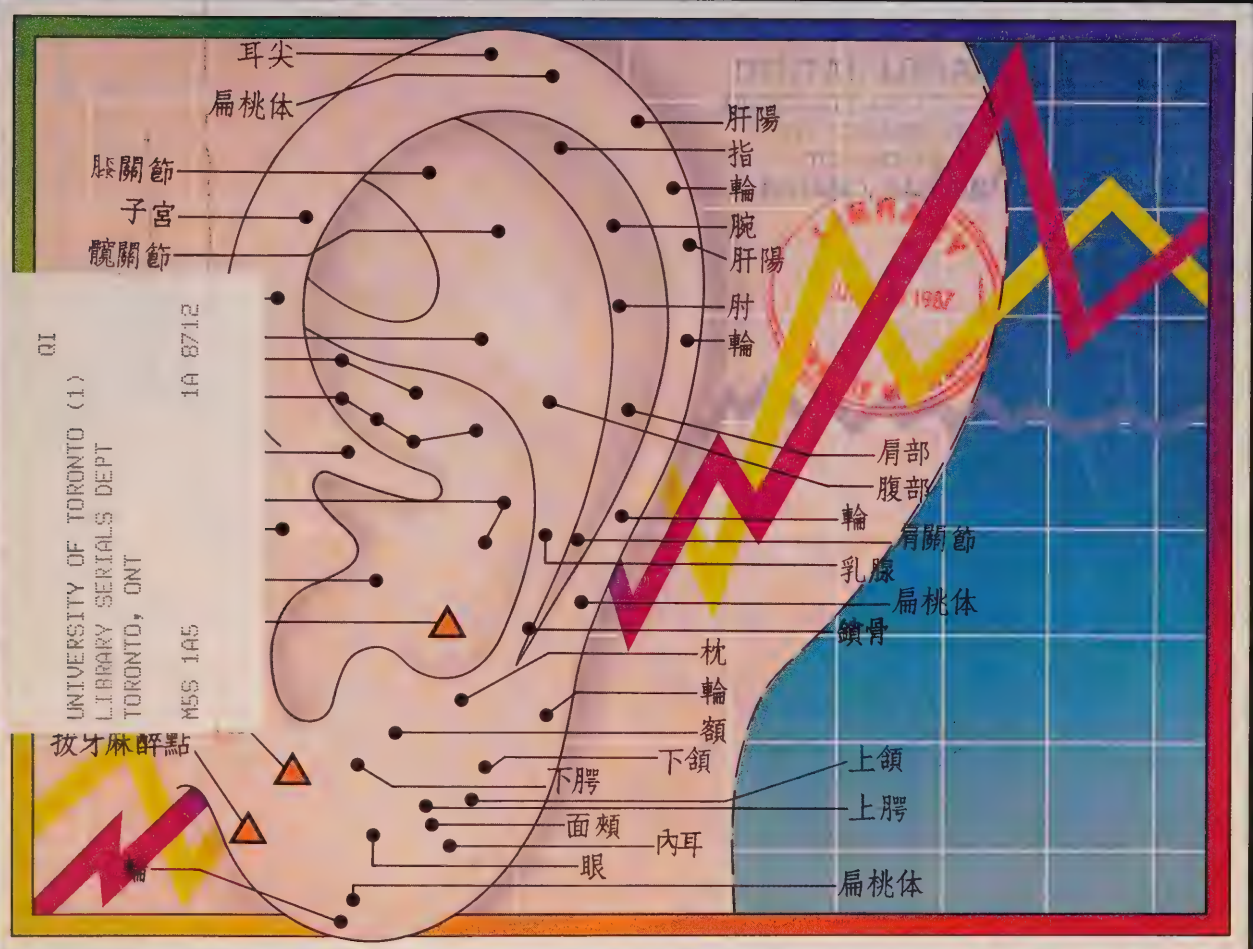
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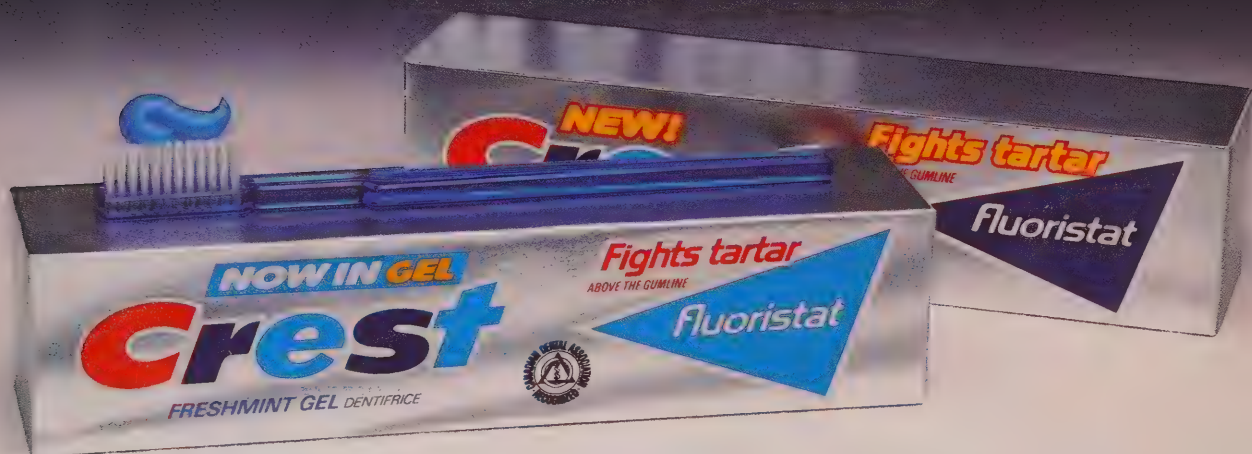
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| Associate Director, Professional Councils .....                                       | Janice Forsythe .....                                                                                                    | Directrice adjointe, Conseils professionnels |
| Third Party Dental Plans, Health Care, Dental Materials, Consumer Product Recognition | Comité des régimes de soins dentaires, Soins de santé, Matériaux dentaires, Agrément des produits pour les consommateurs |                                              |

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## ADMINISTRATION

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|                                                            |                                                               |                               |
|------------------------------------------------------------|---------------------------------------------------------------|-------------------------------|
| Director of Administration .....                           | Joel R. Neal .....                                            | Directeur de l'Administration |
| Membership Inquiries .....                                 | Lydia Allison .....                                           | Responsable du Recrutement    |
| Accountant .....                                           | Sergio Vial .....                                             | Comptable                     |
| Administration, finances, information systems, membership. | Administration, finances, systèmes d'information, recrutement |                               |

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## COMMUNICATIONS

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Director of Communications .....                                                                                                                                              | Linda Teteruck .....                                                                                                                                                                                                     | Directrice des communications                            |
| Information officer .....                                                                                                                                                     | Kimberley Allen .....                                                                                                                                                                                                    | Agent d'information                                      |
| DAT Coordinator .....                                                                                                                                                         | Win Mobley .....                                                                                                                                                                                                         | Coordonnatrice du TAED                                   |
| Conventions/Conferences .....                                                                                                                                                 | Ann Lodge .....                                                                                                                                                                                                          | Responsable des congrès et des conférences               |
| Librarian/MEDLINE .....                                                                                                                                                       | Trudi DiTrollo .....                                                                                                                                                                                                     | Bibliothécaire/MEDLINE                                   |
| Editor .....                                                                                                                                                                  | Carolyn Hackland .....                                                                                                                                                                                                   | Rédactrice en chef                                       |
| Associate Editor .....                                                                                                                                                        | Clarence Metcalfe .....                                                                                                                                                                                                  | Rédacteur adjoint                                        |
| Advertising Manager .....                                                                                                                                                     | Anna Spencer (416-482-1830) .....                                                                                                                                                                                        | Responsable de la publicité                              |
| Production/Circulation/Classified .....                                                                                                                                       | Anne Bisson .....                                                                                                                                                                                                        | Responsable de la publication, du tirage et des annonces |
| Dental Aptitude Testing Program, Journal, Dental Awareness Program, Student Affairs, Resource Centre, MEDLINE, Conferences, Conventions, media relations, public information. | Test d'aptitudes aux études dentaires, Journal, Programme de sensibilisation dentaire, affaires étudiantes, Centre de documentation, MEDLINE, conférences, congrès, relations avec les médias, renseignements au public. |                                                          |

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## PUBLICATIONS: OLD DOGS, NEW TRICKS

**A**t the April 1987 Board of Governor's meeting, a vote for a new direction in CDA publications was cast. With that vote, the Editorial Board, a Committee of Executive Council which was established in 1979, was officially disbanded. In its place, the CDA Publications Committee was created. This body is also a standing Committee of Executive Council. Part of the mandate of the new, four-member Committee will be to ensure that all CDA publications, including the Journal, are effective and pertinent. The Committee will make policy recommendations on all CDA Publications which require fiscal, editorial, format, advertising and content direction.

If that seems to you to be a tall order, and one that has been given to editorial committees before, you are right on both counts. But the new publications committee: consisting of CDA's Executive Director, Jardine Neilson, Dr. John Hardie, (as Chairman), Dr. Ralph Crawford and Dr. Pierre Desautels, is a committed, dynamic group with a genuine interest in promoting CDA publications and making them the best. The editorial staff of both the Journal and the Communique can feel the energy and enthusiasm emanating from the new Committee, and we believe that our readers will be the winners as a result of the Committee's forthcoming deliberations. Bearing in mind that the Committee will be responsible for all of CDA publications: the Journal, the Communique, and any special bulletins etc. which may be distributed to the profession, readers may see at last a uniformity of format, and less overlapping of information taking place to the benefit of all publications.

Although many of the proposed new directions for CDA's publications are still under discussion, some content modification and design upgrading, particularly on the Journal, should surprise some of our readers. The Journal has, for many years, tried to be "all things to all people" — sometimes at the expense of being an interesting, and relevant publication.

While quality in production and layout has always been the hallmark of the Journal — Job One, if you will — the content direction has often been a thorny point of discussion. With some help from the Publications Committee the Journal hopes to be taking some new directions in its content — more clinical features for the general practitioner; news items presented in unique ways; and, I have high hopes for some "people" features as well, written from some different points of view. The publication of original, Canadian scientific research is expected to continue.

New directions are always difficult to achieve, and while exploring new territory, particularly in publishing, can be exciting, it can also risk some reader comment. But while the readers may not always agree with what the Journal or the Communique are achieving — and controversies are bound to arise — we hope that at least the publications will be read and considered as dynamic and relevant to the profession.

But in order to help the Committee and the publications achieve these goals, we could use a little help from our friends — our readers who can offer suggestions, ideas and criticisms, positive or negative. As one of the members of the new Publications Committee is fond of saying: "*We can't do it alone!*"

But working together: readers, Committee and editorial staff, we may help CDA publications be the best information sources for the profession — and the most interesting.

Carolyn Hackland  
Editor, JCDA



# News Update

## OTTAWA DENTAL SOCIETY STAGES WEEK-LONG 'DENTISTRY WITH A HEART'

There has been an outbreak of "dentists with a heart" across Canada.

In at least two cities, Medicine Hat and Montréal, on Valentine's Day this year, some local practitioners provided free treatment to those unable to receive regular dental care, mainly for economic reasons.

Members of the Ottawa Dental Society decided they "had the potential to do it on a larger scale," said Dr. Ian McConnachie, chairman of that body's "Dentistry with a Heart" Committee, in an interview with the Journal.

Because of the number of dentists prepared to volunteer their services (68) and the need in the community, Dr. McConnachie said, the Society was prepared to extend this project through a whole week in April.

It was staged from April 6 to the 10th.

### 700 calls a day

A number of Society members' wives volunteered to take telephone calls for appointments, and in two of the days in that week, handled more than 700 calls.

A grand total of 2,251 calls were received.

Attractive notices had been posted in institutions, social service agencies, soup kitchens, etc.

The project was designed to provide a service to the low income people, the no-income people, seniors and students. "Basically those people who don't have a dentist of their own," Dr. McConnachie explained.

### Services provided

Several of the participating dentists didn't book any regular patients during the half day, full day, or in some cases, two-day periods they set aside to supply the service.

Treatment included prophylaxis, examinations, fluoride treatment, small restorations, extractions and minor dental repairs.

Feedback from the people indicated they were made much more aware of the need to visit their dentist more often. Some called the Ottawa Dental Society to say they felt the concept was "wonderful".

### Several benefits

Dr. McConnachie felt the program offered several benefits for the community's dental professionals. In addition to its PR value, he said it was good for the members of the



Ottawa dentist Dr. Elwood Mitchell, one of the participants in "Dentistry with a Heart", with one of his patients

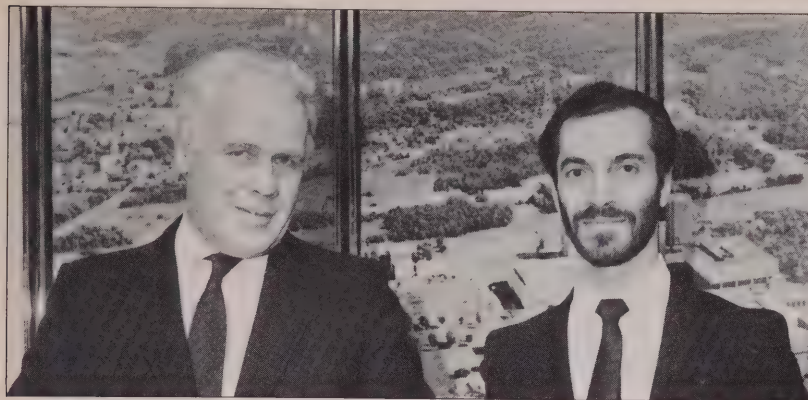
dental society in that "it brought them together in a common cause".

The Royal College was concerned initially that the program might run afoul of regulations and professional ethics, Dr. McConnachie said. There was the concern that it might be construed as advertising. Therefore all dentists received a kit prior to the program advising them how to proceed.

Although individual reports were just beginning to arrive at press time, the Society was told that many of the clinics had been "extremely busy".

Dr. McConnachie said that he personally hoped the program would be repeated. He was convinced that the project had very considerably enhanced dental awareness in the community, during National Dental Health Month. "The feedback was very, very positive," he said, and the media coverage was good.

He feels that a repeat staging of the program would attract participation by at least 100 of the society's dentists, because of the good reception that 1987 project gained in the community.



Dr. Domenic Morielli is seen, right, after receiving his degree in oral and maxillofacial surgery from Dr. André Charest, left, director of the new program at Laval University's dental school.

## LAVAL OFFERS UNIQUE ORAL SURGERY DEGREE

After four years of postgraduate studies at the Laval University's Dental School, Dr. Domenic Morielli recently received a degree in oral and maxillofacial surgery from Dr. André Charest, director of the program.

The program is unique in North America. The Laval Dental School is the only one on the continent offering a postgraduate program in oral and maxillofacial surgery in the French language and, to do so, it is assisted by the Medical School.

Since its inception, the new program has created 11 specialists, including six who are actually residents.

Members of the Faculty include: Drs. Jean-Yves Turcotte, André Charest, Guy Maranda, Rénaud Morency and Roland G. LaFlèche, in addition to Drs. Victor Goodyer and Pierre-Eric Landry, from l'Hôpital de l'Enfant-Jésus.

Dr. Morielli practices his specialty at the Santa Gabrieli Hospital in Montréal, and also conducts a private practice.

## LASER RESTORATION TECHNOLOGY, NEW FACET OF AGD ANNUAL MEETING

The Academy of General Dentistry's 1987 Annual Meeting, "The Changing Shape of Dentistry," has had a major scientific session added to its agenda of continuing education courses. "The Laser Probe and Computer Manufacture of Dental Restorations" will be one of the comprehensive selection of scientific courses offered at the Annual Meeting in Seattle, Washington, July 17-22.

François Duret, DDS, MS, director of dental research at Marseilles University, France, and Gerald McLaughlin, DDS, instructor in the Department of Pediatrics at New York University College of Medicine, New York City, will present the new course

on Sunday, July 19, and Monday, July 20. They will demonstrate the precise, efficient fabrication of inlays, crowns and bridges using the system of computer assisted design and manufacture (CAD/CAM). The course will explore the history, technology, and accuracy of this revolutionary system, and will address methods for overriding the computer system to develop customized restorations. Drs. Duret and McLaughlin will show how the impression tray can be replaced with a hand-held laser scanner, and will present an actual case using slides and videotapes.

The meeting will also highlight "Patients with Disabilities — An Aging Patient Population" on Saturday, July 18. Sponsored by the Academy of Dentistry for the Handicapped, this scientific session will identify management skills needed to treat the elderly. The full-day session will be divided into various sections, including: adding the disabled patient to the practice; drugs and the adult disabled and elderly; management of medical and dental emergencies; treatment planning and behavior guidance; chairside management of the adult disabled; the medically compromised geriatric patient and the institutionalized geriatric patient.

Robert Jankelson, DDS, of Seattle, will present "Electromyography and Computerized Scanning in Diagnosis of TMJ-MPD Syndrome" on Thursday, July 16. This participation course will focus on the etiology, relationship, and treatment of the complex symptoms of TMJ-MPD syndrome. The course will stress the use of advanced computer technology in determining appropriate therapy and in directing the patient to appropriate therapists. "The material in the course provides a way for dentists to make the transition to the diagnosis of head and neck pain typically used by the medical profession," emphasizes Dr. Jankelson, who has presented over 300 postgraduate seminars internationally.

## DENTAL GOODS: RATES OF DUTY AND FEDERAL SALES TAX

The following is a listing of some of the more commonly used dental goods and their applicable rates of duty and federal sales tax. This listing reflects the most recent changes to the Excise Tax Act, which resulted from the February 18, 1987 Budget and was prepared by Dr. Robert Hicks, Chairman of CDA Taxation Committee.

| Goods                                                      | Tariff Number | Duty          | Federal Sales Tax |
|------------------------------------------------------------|---------------|---------------|-------------------|
| Abrasive wheels — points                                   | 47600-1       | free          | 12 per cent       |
| Acrylics and tray materials                                | 48005-1       | 10 per cent   | 12 per cent       |
| Alloy — Amalgams                                           | 48007-1       | 12.5 per cent | 12 per cent       |
| Anaesthetics, dental in cartridges                         | 22001-1       | 9.5 per cent  | 12 per cent       |
| — with Epinephrine — intravenous e.g. Sodium Pentothal     | 22001-1       | 9.5 per cent  | exempt            |
| Anaesthetic Syringes                                       | 47600-1       | free          | 12 per cent       |
| Arch wires, preformed                                      | 47600-1       | free          | 12 per cent       |
| Arch wire                                                  | 48001-1       | free          | 12 per cent       |
| Articulating paper                                         | 19900         | 10.2 per cent | 12 per cent       |
| Articulators/face bows                                     | 47600-1       | free          | 12 per cent       |
| Bite wafers — wax                                          | 71100-1       | 10.2 per cent | 12 per cent       |
| Cements                                                    | 48001-1       | free          | 12 per cent       |
| Composition filling materials — including temporary cement | 48007-1       | 12.5 per cent | 12 per cent       |
| Cotton pellets/rolls                                       | 52305-1       | 22.5 per cent | 12 per cent       |
| Crowns, bridges, dentures etc. — i.e. dental prosthesis    | 48002-1       | 10.2 per cent | exempt            |
| Dental Chairs/units                                        | 42300-1       | free          | 12 per cent       |
| Dental Stones/plaster of Paris                             | 48004-1       | free          | 12 per cent       |
| Developer and Fixer                                        | 47600-1       | free          | 12 per cent       |
| Duffing wheels — cotton                                    | 57901-1       | 15 per cent   | 12 per cent       |
| Fluoride solution — gels etc.                              | 22001-1       | 9.5 per cent  | 12 per cent       |
| Hand pieces and parts                                      | 47600-1       | free          | 12 per cent       |
| Hypodermic needles                                         | 47600-1       | free          | 12 per cent       |
| Impression materials                                       | 48016-1       | 7.5 per cent  | 12 per cent       |



| Goods                            | Tariff Number | Duty          | Federal Sales Tax | Goods                                          | Tariff Number | Duty          | Federal Sales Tax | Goods                                                                 | Tariff Number | Duty          | Federal Sales Tax |
|----------------------------------|---------------|---------------|-------------------|------------------------------------------------|---------------|---------------|-------------------|-----------------------------------------------------------------------|---------------|---------------|-------------------|
| Instruments                      | 47600-1       | free          | 12 per cent       | Orthodontic functional appliances              | 47600-1       | free          | exempt            | Printed materials — instructions for patients                         | 17800-3       | free          | 12 per cent       |
| Matrix bands                     | 47600-1       | free          | 12 per cent       | Orthodontic head gear appliances               | 47600-1       | free          | 12 per cent       | — booklets without advertisements — solely for educational, technical |               | free          | exempt            |
| Model Trimmer                    | 42700-1       |               | 12 per cent       | Paper Products — Towels, cups, napkins etc.    | 19900-1       | 10.2 per cent | 12 per cent       | Retraction Materials                                                  | 48001-1       | free          | 12 per cent       |
| Models, dentals                  | 48015-1       | free          | 12 per cent       | Pins and Posts                                 | 48001-1       | free          | 12 per cent       | Rubber ligatures                                                      | 47600-1       | free          | 12 per cent       |
| Napkins — not paper              | 23600-1       | 17.5 per cent | 12 per cent       | Plastic Products — cups, surgical drapes, etc. | 93907-1       | 13.6 per cent | 12 per cent       | Rubber — Rubber dams, tubing etc.                                     | 61800-1       | 10.3 per cent | 12 per cent       |
| Orthodontic bands                | 47600-1       | free          | 12 per cent       | Pumice                                         | 29800-1       | free          | 12 per cent       | Screws (Star etc.)                                                    | 48001-1       | free          | 12 per cent       |
| Orthodontic brackets             | 47600-1       | free          | 12 per cent       |                                                |               |               |                   | Screws — expansion                                                    | 47600-1       | free          | 12 per cent       |
| Orthodontic removable appliances | 47600-1       | free          | exempt            |                                                |               |               |                   | Sterilizers                                                           | 47600-1       | free          | 12 per cent       |

## PRESIDENT'S COLUMN

Dr. John R. Robertson

### DO YOU KEEP INFORMED? — GET INVOLVED!

Too many times have I heard the phrase, "What do I get from CDA, and what goes on at all those CDA meetings in Ottawa and across Canada?" Perhaps if those asking read our *CDA Journal* more often, or read our *Communiqué* or attendance at CDA meetings by local members increased, or there was more response to call the President days, those questioning the values of CDA might be party to the information flow which is there for the taking.

There is never a lack of information to keep you, the member informed. Numerous *CDA publications*, our *Communiqué*, special news bulletins, DAP reports, provincial journals and newsletters are printed. These are published not to keep the printing industry busy nor the lumber business making paper, but to inform *you*. You must become personally involved in your profession.

None are the days when we could work away in our own little world when there was not a whole lot of action, locally or nationally. Today dentistry is a business the same as any other and must be run as such. Our profession is dentistry; it's been subject to some very dramatic changes in the past 15 to 20 years. But to keep up you must become involved and informed in the day to day activities of your Association.

One of our past presidents coined a phrase, "CDA: Can't do it alone". Yet we as your officials face that very problem. We need you to become involved in dentistry outside of the office, in your municipality, provincially, and one hopes, eventually at the national level. We cannot expect all who become involved in the local or provincial scene will become nationally involved, and many do not wish to do so. We need good people to run, organize and maintain our provincial organizations and to provide mechanisms to inform their general members. Becoming involved does not mean you have to seek office at any level. Just alerting yourself through the various sources of printed information, local meetings, study groups, and the like is a start.

When was the last time you had a class reunion? Did you go? When was the last time you attended a CE course or a convention, national or regional? This type of involvement is a terrific way to exchange ideas, philosophies, learn about new techniques and also to find out that the things which take place in your office are not often unique to you but are problems shared by all of us. Involvement spreads also, as I mentioned, into your community. A good many of our profession serve their community in various ways. Attend or join your local Chamber of Commerce, or one of the local service clubs. The key is not what you do, it is just to become involved outside of your office. You will find that your life is a lot more fulfilled and that you may have skills which can benefit you, your family, your profession and your community. Many dentists and their families are community leaders — in many different community activities. Many dental students already participate in a great many community affairs and are going to be some of our future leaders in dentistry. But students too must keep themselves informed on the day to day activities provincially, locally and nationally.

Be informed, be active, be involved. You will be surprised at the benefits that can be derived. I urge you, next time you are a little reluctant to accept an invitation to a service club dinner, a church social, a CE session or a convention, accept and you will be all the richer for it. CDA needs involved people. *We need you.*

#### NOTE:

The above list generally reflects the federal sales tax status of the specified dental goods when sold to dentists in their daily in-office dental practices. However, some of the goods mentioned in the list and shown to be taxable at the rate of twelve per cent may qualify for conditional federal sales tax exemption when purchased by dental or orthodontic laboratories (i.e. manufacturers or producers of preformed and pre-assembled orthopaedic and orthodontic braces and/or artificial teeth) to be incorporated into and form a constituent and component part of a tax exempt good (e.g. arch wire, brackets, pins, posts, screws, etc. to be incorporated into tax exempt preformed and preassembled orthodontic appliances exempted as orthopaedic braces by way of subsection 29(1) and section 18 of Part VIII of Schedule III to the Act).

## EXECUTIVE DIRECTOR'S REPORT ON THE 1987 INTERIM MEETING OF THE CDA BOARD OF GOVERNORS HIGHLIGHTS AND PRINCIPAL DECISIONS

The following is a report highlighting events of the Interim Meeting of the CDA Board of Governors, held in Ottawa on April 3-4, 1987.

### Audited Financial Statements

The Board reviewed and approved the audited financial statements of the Canadian Dental Association and the Canadian Dental Research Foundation, prepared by the firm of McCay, Duff & Company. The balance sheet and statement of expenses are published in this issue of the Journal.

### CDA Priorities and 1987 Adjusted Budget

At the 1986 Planning Session, Executive Council reviewed Association priorities and examined areas requiring heightened emphasis.

Alternate Delivery Systems, Professional Resource Utilization, Membership Strategies, Dental Awareness, Accreditation, Government Relations, and the funding of an appropriate level of staff support for CDA programs, were identified as priorities. Newly identified priorities necessitated adjustment to the 1986 and 1987 budgets. Executive Council directed that these budgets be reviewed by senior staff in consultation with Council/Committee Chairpersons and Executive Liaisons, to identify potential reduction of expenses through postponement/cancellation of planned meetings.

While economies were effected within program responsibility areas, it was not possible to identify sufficient funds for allocation to emerging priorities, at acceptable levels within the goal of a balanced 1987 budget. Motions as outlined below were approved by Governors, in order to permit a reallocation of funds:

- That payment of an annual amount of \$1,000 to Executive Council members for unaccountable expenses be eliminated.
- That there be no increase in the current rate of per diems and honoraria for 1987.
- That there be a change in the policy on per diem entitlement for Executive Council members during Conventions.

### 1988 Membership Fee Increase

The Board approved a 7.7 per cent (\$ 20.00) increase to the 1988 membership fees, in addition to the initial increase approved by the Board at the 1986 Annual Meeting. The review of an adjustment to the



## DID YOU KNOW?

by Dr. Ralph Crawford  
Chairman, Membership Committee

### C.D.A. SEAL OF RECOGNITION (Part one)

**DID YOU KNOW?** In 1971, the C.D.A. Council on Communications suggested to the Board of Governors that the profession has an obligation to inform the public about products which affect dental health. Early deliberations on recognizing certain dentrifices that had therapeutic value were under the auspices of the old Council on Communications.

**DID YOU KNOW?** It was 1973 when the Board of Governors formally approved the official "Seal of Recognition".



The Seal was first granted to two toothpaste manufacturers — Colgate and Procter and Gamble. It was C.D.A.'s formal recognition that the fluoride contents in the products could reduce dental decay.

**DID YOU KNOW?** The committee structure and responsibility has evolved considerably since the early 1970's. First under Communications, then as a Committee on Dental Therapeutics within the old Council of Research, later as a Committee under the Council of Information Services.

In 1977 the Board of Governors declared positively its support of a program that affirmed C.D.A.'s acceptance of therapeutic products which aid in the prevention of dental disease, and recommended that a specific Committee on Dental Therapeutics be established to . . . .

- administer the C.D.A. Seal of Recognition Programs
- advise on therapeutic claims in Journal advertising.

A further name change was to occur; in 1980 the Board approved a Committee of the Executive Council . . . as it is today.

**DID YOU KNOW?** Yet another change! In 1985, the Committee felt that its current areas of activity were too restrictive in the face of an ever-expanding market of consumer products available for preventive dentistry. Consequently, the name of the Committee changed to *Consumer Products Recognition* with a mandate to cover *all* consumer products used to promote dental health.

Initially, the Committee will limit its new activities to products containing pharmacological agents with therapeutic benefit — those aimed at plaque control.

#### DID YOU KNOW?

1. What it costs a Company for a Seal of Recognition application?
2. How many products to-day carry the Seal of Recognition?
3. How much profit C.D.A. makes for the Seal?

*Watch next month's Column for more!!*

**DID YOU KNOW?** (In history) That Lacrosse as we know it today was "invented" by a Montreal dentist, Dr. George W. Beers. After watching the Indians play their ancient version in the mid 1850's, Dr. Beers framed the set of rules that established modern Lacrosse. In 1867 by an Act of Parliament, Lacrosse was proclaimed Canada's National Sport (and I bet you thought it was hockey!).

*"It is not the gods, but we ourselves who shape our destiny."  
Socrates.*

1987 budget and a preliminary forecast of 1988 program priorities necessitates this additional increase. This increase will result in a 1988 fee for active members of \$290.00. There has been no increase to the corporate fees for 1988.

### Term of Office CDA President and Elected Officers

In the past, there have been occasions when the timing of the Annual Meeting of

the CDA Board of Governors in conjunction with the CDA Convention, has had an adverse impact on the term of office of the CDA President.

Future scheduling of CDA Conventions indicates August Meeting dates for the Annual Board Meetings in 1988 and 1989, with a resulting impact on Presidential terms.

The Board approved a one-year set term for the President and all elected officers of



Councils and Committees of the CDA. The annual term will be from October 1 through September 30 of the following year. The Council on Constitution and By-Laws will present the necessary By-law amendments to the 1987 Annual Board Meeting.

## Vacancies on Executive Council

Under the current CDA By-Laws, a vacancy on Executive Council may be filled through nomination of Executive Council and appointment by the President — the appointee coming from among the members of the Board of Governors. The Board approved a recommendation from Executive Council which places a 90-day limit on the duration of vacancies on Executive Council, after which an appointment will be mandatory.

## Distribution of the Life Plan Surplus

Executive Council considered a proposal put forth by the Council on Insurance and Investment, concerning the disposition of the Life Plan Surplus. The proposal recommended utilization of the surplus funds of the CDIP Life Insurance Plan to subsidize and support the rate stabilization reverse of the CDIP LTD Plan.

The Council on Insurance and Investment was directed to amend the proposal to reflect the concerns of Executive Council, with regard to the equity and legality of the distribution.

Executive Council expressed two basic concerns related to the distribution being considered as "legally correct":

1. That there be an equitable distribution to the participants; and,
2. that there be an on-going mechanism for dealing with future surplus distributions. Implementation of surplus distribution proposals would be effected through amendment to the 1987 Participation Agreements.

A meeting of the actuaries of CDSPI and QDSA took place on February 6, 1987. This meeting was called in order to provide QDSA actuaries with background information and philosophy related to the current structure of the CDIP Life Program, its surpluses and reserves.

Following this meeting, QDSA actuaries developed a number of options on managing the Life Plan Surplus, indicating the degree to which, in their opinion, each complies with the CDA Executive Council direction. This material was forwarded to the Council on Insurance and Investment for information and review.

Executive Council has reiterated its previous direction to the Council on Insurance and Investment regarding the development of options on distribution of the Life Plan

Surplus. Further, Council again requested a written opinion of an independent insurance consultant as to the value of retaining a major portion of the surplus in reserve for benefit plan stabilization purposes, and the impact of reserves on the rate structure. A response has been requested by June 11, 1987.

It is the intent of Executive Council to present recommendations on the distribution of the Life Plan Surplus to the 1987 Annual Meeting of the CDA Board of Governors.

## Fédération Dentaire Internationale

At the 1986 Annual World Dental Congress held in Manila, the General Assembly approved Vancouver, Canada as the 1994 site of the FDI World Dental Congress.

Dr. William R. Thompson was re-elected to a further three year term as a Council member of the FDI.

An increase in the 1987 FDI Budget of 11.8 per cent over 1986, and a decision that

penses for the year ended December 31, 1986 have been extracted from the Auditors' Report and are presented for your review. Copies of the complete audited statements as prepared by McCay, Duff and Company may be obtained from the CDA Resource Centre.

## 1986 AUDITED FINANCIAL REPORT

The audited financial statements of the Canadian Dental Association were adopted at the Interim Meeting of the CDA Board of Governors. The Balance Sheet and Statement of Revenue and Ex-

## CANADIAN DENTAL ASSOCIATION BALANCE SHEET AS AT DECEMBER 31, 1986

|                                                | 1986        | 1985        |
|------------------------------------------------|-------------|-------------|
| <b>ASSETS</b>                                  |             |             |
| <b>CURRENT</b>                                 |             |             |
| Cash                                           | \$ 417,179  | \$ 778,036  |
| Cash — Building Contingency Fund               | 2,674       | 25,445      |
| Deposit certificate                            | 495,390     | 750,000     |
| Accounts receivable                            | 53,095      | 150,769     |
| Inventory (note 1)                             | 41,210      | 49,457      |
| Prepaid expenses                               | 23,152      | 64,006      |
|                                                | 1,032,700   | 1,817,713   |
| <b>FIXED (notes 1 and 2)</b>                   | 1,369,829   | 1,379,134   |
|                                                | 2,402,529   | 3,196,847   |
| <b>TRUST ASSETS</b>                            |             |             |
| Cash                                           | 46,910      | 52,703      |
| Accounts receivable                            | 302         | 1,276       |
| Prepaid expenses                               | 7,876       | 5,300       |
| Library books and furniture (at nominal value) | 1           | 1           |
|                                                | 55,089      | 59,280      |
|                                                | \$2,457,618 | \$3,256,127 |
| <b>LIABILITIES</b>                             |             |             |
| <b>CURRENT</b>                                 |             |             |
| Accounts payable                               | \$ 95,656   | \$ 147,095  |
| Deferred revenue                               | 284,912     | 696,640     |
| Current portion of long term debt              | 27,150      | 27,150      |
|                                                | 407,718     | 870,885     |
| <b>LONG-TERM DEBT (note 3)</b>                 | 468,337     | 495,487     |
|                                                | 876,055     | 1,366,372   |
| <b>EQUITY</b>                                  |             |             |
| <b>SURPLUS</b>                                 | 652,132     | 973,978     |
| <b>EQUITY IN FIXED ASSETS (note 4)</b>         | 874,342     | 856,497     |
|                                                | 1,526,474   | 1,830,475   |
|                                                | 2,402,529   | 3,196,847   |
| <b>TRUST EQUITY</b>                            |             |             |
| Library Trust Fund                             | 48,242      | 51,533      |
| The Grieve Memorial Lectureship Fund           | 6,847       | 7,747       |
|                                                | 55,089      | 59,280      |
|                                                | \$2,457,618 | \$3,256,127 |

responsibility for 44.7 per cent of the budget revenue be assigned to Supporting Member Associations, resulted in an average increase of 32.8 per cent to the normal contribution required of Member Associations. In addition, two factors used in the formula determining the allocation of the portion of the revenues required from each Supporting Member Association were updated. These two factors, the overall increase in revenue requirements, and alteration to the formula, resulted in an 81.2 per cent increase in the subscription rate for Canada in 1987, over the 1986 rate.

In reporting to the Board on the subscription increase, FDI National Treasurer Dr. Robert Hicks indicated that the FDI Council has agreed to examine the current "formula", and make recommendations toward a more equitable method of cost-sharing by Member Associations. Further, an administrative review of FDI is currently being undertaken. This will entail an examination of the FDI organization, the potential for additional sources of revenue, and a study of the location and timing of World Congresses.

Governors adopted a motion approving a 1987 subscription fee of \$17,034 U.S., and endorsing continued support and participation in international dentistry and FDI for 1987.

### Third World Dentistry

The CDA has received a joint proposal from the FDI and WHO concerning the assignment of a funded Canadian dentist to the WHO Secretariat. The 1986 Planning Session endorsed CDA commitment to third

world dentistry within the context of the current budgetary constraints, which do not allow for financial support of this magnitude to the WHO Secretariat.

The Association continues to actively assist in third world dentistry, sponsoring projects in St. Kitts and Haiti, which are supported by grants from CIDA. An application for funding has recently been submitted to CIDA for an additional project — "An Alternative Model for Oral Health Care in Thailand".

### Professional Resource Utilization

Dr. Bradley Holmes, Chairperson of the PRU Committee presented a report to the Board outlining the Committees' activities since the 1986 Annual Meeting. The results and conclusions of a CDA-sponsored demand-side study were reviewed by the Committee, projecting an over supply of dental human resources of 30-50 per cent. Communication is ongoing with the Federal/Provincial Committee on Health Human Resources on the integration of CDA objectives with that of the Committee.

On January 10, 1987, the PRUC met with deans of the ten Canadian dental faculties and the Presidents of ACFD and CDHA, to communicate data on forecasts of dental professional resource utilization, in terms of supply and demand for treatment services. Unanimous agreement was reached by all parties that a substantial reduction in the output of new practitioners by dental schools is required.

The PRUC endorses a 30 per cent cut-back in enrolment of dental students to be effected in the 1988-89 academic year.

A follow-up meeting of the deans was held on January 21, 1987. The following are highlights of the conclusion of that meeting: (1) For anglophone dental faculties, there is a commitment to strive for an overall reduction of 25 per cent in undergraduate intake, and when attrition\* is taken into account, close to a 30 per cent reduction of present manpower production could be achieved.

(2) Quebec was excluded from the formula because it is suspected, although not proven, that epidemiological data from that province would indicate that there is a heavy requirement for restorative treatment. Further, the migration pattern of dentists from Quebec to elsewhere in Canada does not follow the same pattern as that experienced in other provinces.

It was suggested that during the academic year 1987/88 it is possible to achieve an overall reduction of approximately 38 persons across Canada. *Each Dean, however, would have to speak, both with his Faculty, Faculty Council and the Senate of the University before any of the reductions proposed could be enacted.*

Deans unanimously supported the idea of approaching the federal government to establish a Commission to examine and plan future oral health needs for Canadians.

### ACFD Task Force on the Future of Dental Education

In November, 1986 CDA received a request from the ACFD, to participate in convening a Task Force on the future of Dental Education. The request was twofold: appoint a CDA member to the Task Force, and provide financial support. Dr. Bradley Holmes was named as CDA representative. In early January, 1987, the Professional Resource Utilization Committee met with the deans of Canadian Dental Faculties and Presidents of the ACFD and CDHA, to discuss dental human resource issues. As a result of these deliberations, the CDA has been informed that the establishment of the ACFD Task Force has been placed on hold. The decision concerning financial support has consequently been deferred.

### Medical Services Branch (MSB) — Independent Review of Dental Services

The CDA has received a copy of the report of the Dental Services Review Team from Medical Services Branch, Health and Welfare Canada. The report has not as yet been officially released, and its external distribution has, therefore, been restricted to the CDA's Executive Council.

## CANADIAN DENTAL ASSOCIATION STATEMENT OF REVENUE AND EXPENSES FOR THE YEAR ENDED DECEMBER 31, 1986

|                                                                                     | 1986                |                     | 1985                |
|-------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|
|                                                                                     | BUDGET              | ACTUAL              | ACTUAL              |
| <b>REVENUE</b>                                                                      |                     |                     |                     |
| Membership fees (page 9)                                                            | \$ 2,071,369        | \$ 2,084,419        | \$ 1,994,451        |
| Accreditation (page 9)                                                              | 110,375             | 112,969             | 102,973             |
| Education (page 9)                                                                  | 155,000             | 199,672             | 158,661             |
| Communications (page 9)                                                             | 122,120             | 395,120             | 63,670              |
| Journal (page 9)                                                                    | 451,000             | 392,599             | 402,492             |
| Other (page 9)                                                                      | 274,282             | 273,328             | 414,604             |
|                                                                                     | <u>3,184,146</u>    | <u>3,458,107</u>    | <u>3,136,851</u>    |
| <b>EXPENSES</b>                                                                     |                     |                     |                     |
| Executive (page 10)                                                                 | 742,300             | 803,200             | 701,777             |
| Administration (page 10)                                                            | 997,167             | 929,237             | 1,215,150           |
| Accreditation (page 11)                                                             | 351,216             | 309,100             | 229,600             |
| Education (page 11)                                                                 | 850,247             | 1,108,953           | 743,133             |
| Journal (page 11)                                                                   | 629,192             | 611,618             | 558,785             |
|                                                                                     | <u>3,570,122</u>    | <u>3,762,108</u>    | <u>3,448,445</u>    |
| <b>EXCESS OF REVENUE OVER EXPENSES<br/>(EXPENSES OVER REVENUE) FOR<br/>THE YEAR</b> | <u>(\$ 385,976)</u> | <u>(\$ 304,001)</u> | <u>(\$ 311,594)</u> |

\*Attrition figures represent the difference between the number of dental school entrants and the number of graduates.





A. Jardine Neilson  
Executive Director

In preliminary discussion with Mr. David Nicholson, Assistant Deputy Minister — Medical Services Branch, the CDA Management Committee agreed that joint CDA/MSB meetings be held, to explore the recommendations of the Review Team's report, and other issues and concerns related to the delivery of dental services to MSB clientele. Medical Services Branch participants were Mr. D. Nicholson, Mr. D.A. Obonsawin, Mr. J. Hucker and Dr. W.R. Bedford. CDA is represented by Dr. Bradley Holmes, Dr. Roy Thordarson and Mr. Jardine Neilson.

Representatives of the CDA and MSB met on November 27, 1986 and March 25, 1987. Principal topics discussed were: the Dental Claims Processing System, the New Schedule of Dental Services, Impediments to an Equitable Fee Structure and the Dental Therapy Program, — school and field operations.

### Membership and Member Services

At its November, 1986 Planning Session, Executive Council approved the establishment of an Ad Hoc Committee on Membership and Member Services. Several areas of concern indicated the necessity for a thorough review of this area.

The Ad Hoc Committee reviewed the future direction of Membership and Member Services, and the role and structure of the Membership Committee, and presented recommendations to Governors for re-emphasized goals and objectives, and revised terms of reference.

The newly approved Membership Committee will consist of representation from the mandatory provinces, the Quebec and Ontario Executive Council Members, and a recent graduate of a Canadian dental school.

### AD HOC Committee on Publications

At the 1986 Annual Meeting, Governors approved the establishment of an Ad Hoc Committee on Publications, to review and make recommendations on CDA publications and their future terms and inter-relationships.

Dr. Ron Markey was named Chairperson of the Ad Hoc Committee. Other members included Dr. John Hardie, Dr. Ralph Crawford, Dr. T. Koltek, and Mr. Jardine Neilson. Miss Linda Teteruck was the principal staff person assigned to the committee.

The Board approved recommendations of the Ad Hoc Committee calling for disbandment of the Editorial Board, and the establishment of an Executive Council Standing Committee on Publications.

The Publications Committee will represent the general CDA membership, in ensuring that CDA publications are effective and pertinent, and will make policy recommendations regarding the fiscal, editorial, format, advertising and content directions of CDA publications.

### CDA Committee on Dental Specialties

The Board approved a recommendation to establish a Committee on Dental Specialties, as a standing committee of Executive Council. The Terms of Reference call for one meeting annually. The main objective of the Committee is to provide a forum for discussion of common interests and concerns of specialists.

### Review of Council and Committee Structure

The current structure of councils and committees was reviewed by the Roles and Responsibilities Committee in relation to flexibility, cost-effectiveness and efficiency. Constitutional requirements for regional and corporate representation, and the size of CDA councils were examined. Definitions of structures of Councils, Committees of Executive Council and Committees of the Board of Governors were approved by the Board. The Committee, under the chairmanship of Dr. John Christie, will proceed to identify the type of structure needed by certain activities, and present recommendations for future change to the present structure, if deemed appropriate.

### CDA Board of Governors — Structure

As a result of requests from the Association of Canadian Faculties of Dentistry and the Order of Dentists of Quebec, a review of the structure of the CDA Board of Governors was undertaken by the Roles and Responsibilities Committee.

The Board adopted a statement endorsing the current structure of the Board of Governors, the underlying principle of the current voting representation on the Board being that each CDA member is represented once by a member on the Board.

Representatives of the organizations listed below will be invited to attend meetings of the Board and be seated in a specially designated area, where they may be recognized by the Chair:

- Association of Canadian Faculties of Dentistry
- Canadian Fund for Dental Education
- National Dental Examining Board of Canada
- Royal College of Dentists of Canada
- Canadian Dental Hygienists Association
- Canadian Dental Assistants Association

### CDA Conventions

The 1988 Convention will be held in Edmonton, Alberta, August 21-24. Convention activities will be centered at the Edmonton Convention Centre; the Westin will be the Headquarters Hotel.

Discussions are currently underway to hold the 1989 CDA Convention in Vancouver; tentative dates are August 27-30.

### Canadian Dental Foundation

The Taxation Committee reported on a review of the present tax treatment of charities and charitable donations, which supports the development of a charitable Foundation for the CDA. Governors approved the establishment of a Canadian Dental Foundation, which will allow members to make tax deductible donations or bequest funds which, in turn, will benefit specific areas of interest of the CDA. Bequests of the Gollop and Langstaff Estates will be transferred to the Canadian Dental Foundation, when the "Foundation" is approved by Revenue Canada.

### Tax Reform

The Taxation Committee presented information to the Board on Tax Reform and a new tax being considered by the Federal Government — the Business Transfer Tax. Executive Council has approved discussion of the BTT issue by the Joint Professional Committee (CDA, CMA, CBA, and the CICA). Governors approved financial support of the preparation of a CDA brief on BTT.

### Federal Sales Tax

The February 18, 1987 Federal Budget removed certain dental materials from their previous sales tax-exempt status. Detailed information was sent to all CDA members in March of this year. Representations have been made to the Minister of Finance and the Minister of Health and Welfare on the

application of this tax to the area of health services delivery. Members have been asked to support these representations through correspondence with their Members of Parliament.

Discussion continues with the Dental Industries Association of Canada concerning refunds of sales tax received by dental supply companies, and compensation to their dentist customers. Although there is no legal obligation to compensate, the CDA through its Taxation Committee will continue to work towards a fair distribution of the substantial amounts of money involved.

### Anti-plaque Guidelines

The Committee on Consumer Products Recognition has completed its development and review of guidelines for plaque removal, as applied to dentifrices and mouth rinses. Governors approved the resulting CDA Guidelines.

The guidelines will be submitted to the Health Protection Branch of Health and Welfare Canada for approval.

### National Strategies for Health Promotion

CDA has been requested by the Minister of National Health & Welfare, the Honourable Jake Epp, to provide comment on general directions in health promotion, as outlined in a recent address by the Minister entitled "National Strategies for Health Promotion". A meeting will be arranged with Health Services and Promotion Branch of Health and Welfare Canada to discuss input of the dental profession generally, with specific emphasis on research funding and sponsorship of dental health promotion.

### Release of Patient Records

The Third Party Dental Plans Committee presented concern that some capitation plans require participating dental practices to make patient records available for audit by representatives of the contract holder. Executive Council has approved a recommendation that provincial licensing authorities be requested to remind dentists of their legal obligations with regard to patient records.

### CDA Policies on Prepaid Dental Plans

A major revision to the CDA Prepaid Dental Plans Policy Manual has been completed. Governors approved the new version of this document.

### Capitation — National Strategy — Public Information Campaign

The Third Party Dental Plans Committee is actively soliciting funds from provincial associations, to support the development

of a Public Information Campaign. This campaign will focus, in general, on dental practice, and specifically on alternative delivery systems. A meeting with provincial representatives was held in Toronto, on March 3, 1987, to seek and solidify required financial support.

All provinces, with the exception of Quebec are committed to financial support of this CDA initiative. The ODQ awareness program is ongoing, and addresses similar issues in that province.

### Professional Liability Insurance — Participants in Capitation Plans

The Board of Governors expressed concern that contracts signed by capitation dentists may expose CDA-sponsored Professional Liability Insurance coverage to increased risk factors.

The Council on Insurance and Investment was directed to investigate and advise the Board on the necessity to shelter the majority of Canadian dentists and their patients from unwarranted professional liability risks.

### Competency Profiles

In January, 1987 a special review Committee was established to further examine and revise Competency Profiles for Dental Hygiene and Dental Assisting, which were presented in draft form for information at the 1986 Interim Meeting of the Board of Governors. The Level 1 (Extra-Oral) Dental Assisting Competency Profile was approved by the Board. Review of the Competency Profile for Dental Hygiene is ongoing.

### The Practice of Dental Hygiene

Information concerning a change in legislation in Ontario on the practice of Dental Hygiene was reviewed by Governors. The Board directed the Executive Council to develop a strategy which will enable CDA to address the developments in Ontario, which may have ramifications across the country concerning changing legislation for dental hygienists. The strategy is to be developed in coordination with provincial dental associations.

### CDA Patient/Public Information Program

The Council on Information Services has undertaken a review of the CDA Pamphlet Program with goals of diversification and updating. Information was presented to the Board on the status of the pamphlet review, and the conversion of certain pamphlets to fact sheets.

### DAP Seminars

A proposal for joint CDA and provincial Corporate Body DAP Seminars for the dental health care team, received Board approval. The Seminars are designed to inform the profession on how to better execute in-office dental awareness programming.

Members of the CDA are invited to contact the Association if they require further information on any of the above items. Members are reminded that proceedings of the Interim and Annual meetings of the CDA Board of Governors are published annually as the CDA Transactions. Copies are available in the Fall of each year and are free of charge to members.

### BOARD OF GOVERNOR'S LUNCHEON SPEAKER: DR. MAUREEN LAW

Dr. Maureen Law, Deputy Minister of Health and Welfare was the keynote speaker at the Friday luncheon at the Interim Board

of Governor's Meeting. Dr. Law is shown (centre) surrounded by CDA's Management Committee (left to right): Dr. Brad Holmes, CDA past-President, Dr. John Robertson, CDA President and Dr. Ron Markey, CDA President-elect.



Photo: Joel Neal



## UNIVERSITY OF TORONTO ALUMNI CONTRIBUTE TO DENTAL FACULTY

The 1986 list of charter members of the University of Toronto, Faculty of Dentistry "Inner Circle" was recently released.

The "Inner Circle" is a group of University of Toronto, Faculty of Dentistry alumni and friends who have "seen the need to keep the Faculty financially sound and who have made a significant financial contribution to the Faculty" in 1986.

The following members of the profession are the "Inner Circle" members for 1986.

Dr. Donald L. Anderson, Dr. Farel H. Anderson, Dr. Paul J. Aquilina, Dr. Murray Arlin, Dr. John M. Arnott, Dr. William D.M. Beaton, Dr. Robert M. Bennett, Dr. Harold A. Berenstein, Dr. Joseph I.J. Bielawski, Dr. Benoit R.

Bourret, Dr. Andrew Boyko, Dr. Raymond G. Bozek, Dr. Gary Dan Bretzler, Dr. Ralph C. Burgess, Dr. Scott M. Butler, Dr. A. Barry Chapnick, Dr. Norma W. Chou, Dr. Milton E. Cohen, Dr. Morely J. Crockford, Dr. Arlene Phyllis Dagys, Dr. Douglas A. Deporter, Dr. Joel W. Dimitry, Dr. David H. Drake, Dr. Thomas G. Drake, Dr. Cameron M. Ellis, Dr. Sante J. Falconi, Dr. John T. Fasken, Dr. James I.H. Fawcett, Dr. Aaron Harvey Fenton, Dr. Eric Freeman, Dr. Ronald G. Golden, Dr. Linda F. Greenwood, Dr. Jack H. Griss, Dr. Ralph Halbert, Dr. Harold C. Hall, Dr. George C. Hicken, Dr. Noble Hori, Dr. James Huang, Dr. Ka-Biu Ip, Dr. Marjorie Jackson, Dr. Peter Harry James, Dr. Alan Joe, Dr. Harry Myer Jolley, Dr. Kai Ming Kan, Dr. Barry Howard Korzen, Dr. Peter W.

Kowalchuk, Dr. Judith Krupanszky, Dr. Victor S. Kutcher, Dr. Gordon D. Lague, Dr. Peter D. Lamantia, Dr. Randy Lang, Dr. R.B. Ruben Layug, Dr. James L. Leake, Dr. Kerry Gordon Ley, Dr. Hardy F. Limeback, Dr. Viola L. Lobodowsky, Dr. Eric Luks, Dr. W. Bruce Malloch, Dr. Alan I. Mandel, Dr. Gordon M. Marshall, Dr. Thomas I.M. McConnachie, Dr. C.A. McCulloch, Dr. David M. McDowell, Dr. Robert S. McKegney, Dr. James R. Miles, Dr. David Ray Miller, Dr. William H. Moebus, Dr. Wallace M. Moseley, Dr. Milton Naiberg, Dr. Shoji E. Nakashima, Dr. John L. Ohorodnyk, Dr. Claude A.J. Page, Dr. Pravin Patel, Dr. Frank J.F. Phillips, Dr. Frank Popovich, Dr. Uwe R. Priller, Dr. John E. Richmond, Dr. James D. Robinson, Dr. Stanley Rosen, Dr. David P. Scanlon, Dr. L. Bruce Schaefer, Dr. Margaret Ruth Sherk, Dr. Robert W. Simonsky, Dr. Percy Singer, Dr. Lawrence Sirota, Dr. Maria-Anna Skalska, Dr. Dennis B. Smith, Dr. Herbert W. Sorenson, Dr. William J. Spencer, Dr. John Stern, Dr. William C. Sturtridge, Dr. Robert J. Sullivan, Dr. Daniel Svara, Dr. Benny A. Venditti, Dr. Howard G. Weld, Dr. George C. White, Dr. Raymond E. Wilson, Dr. Alan N. Winnick, Dr. Wang L.R. Yip, Dr. Sydney I. Young, Dr. John M. Phillips, and Dr. Anthony H. Melcher.

## AD LIB

by Cuspid

### RETIRING

We have nineteenth century German chancellor Otto Von Bismarck to thank for the notion of retirement at the age of 65. Bismarck offered German workers paid retirement at that age, safe in the knowledge that few would live that long.

Nowadays, with health and longevity much increased, we still stick to the somewhat arbitrary retirement age of 65 . . . although the self employed have much more flexibility about this.

Even so, for dentists, retirement is something to think about early. But apart from the question of hanging up your drill and reaping the rewards of a lifetime of practice, dentists, like surgeons, base their skills on manual dexterity . . . something that declines in most people in their late 50s and early 60s.

Much has been written about the need for financial security in retirement, and the consensus is that you should start planning for that on the very day you start practice. Most retirees from the higher paid professions, unless they have taken wild fiscal flyers, are financially prepared. The mental adjustment is more difficult. On the day after retirement, gone are the comforts of a routine, the authority and status of a respected position in the community; in short, something of a vacuum is created.

Unfortunately, our education system prepares us for a career and not for a life beyond work.

The secret, then, is to prepare for such a life before it becomes a reality. Develop the discipline to set aside time from your professional schedule to take up hobbies that will serve you well in retirement. Gerontologist Dr. Bertram B. Moss says that the successful retirement is marked by good health, financial security and the willingness to try an avocation or an unfulfilled ambition. He stresses the need to retire to — not from.

So retirement isn't just an endless vacation, it's a new opportunity. A time to catch up on all the reading that you would like to have done; to perfect your golf swing; to travel. And perhaps most important, retirement is a chance to place your knowledge and experience at the disposal of your community. Work for volunteer health agencies and other community services can be extremely rewarding, while supplying the retiree with a sense of worth that might otherwise have been lost when he ceases to be identified as a practising professional.

And there's education, too. A physician friend of mine, upon his retirement, decided to take a law degree. He's now a much sought after 'expert' on medical jurisprudence.

The opportunities are endless, and only timidity need prevent you from trying something. Remember, Daniel Defoe wrote his first novel *Robinson Crusoe* when he was nearly sixty . . . and Churchill was at the peak of his powers in his late sixties. The President of the United States is approaching eighty.

So, if you play it right, retirement isn't a time for mooching and looking back. It's a time of golden opportunity.

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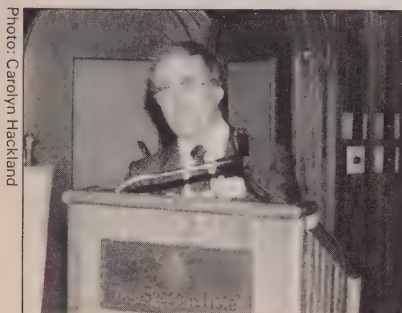
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## DENTAL AWARENESS RECEPTION: VIP'S MAKE THE PLEDGE

This year's reception kicking off Dental Health Month was held April 2, 1987 in Ottawa's Four Seasons Hotel. The theme for the 1987 campaign was "Making the Pledge" to keep teeth Good For Life, and many CDA luminaries, government representatives and representatives from allied health care organizations were in attendance to get the April campaign off to a fine start. The photos show some of the highlights.



Dr. John Robertson, CDA President welcomes guests and invites them to sign the Pledge posters.



Dr. Clyde Covit, (left) Vice President of the Ordre des Dentistes du Québec presents Dr. Robertson (right) with a "Good For Life" sweatshirt.



Dr. Clement LeBlanc, CDA Governor from New Brunswick, is seen signing the Pledge poster



(Left to right) David Nicholson, Assistant Deputy Minister, Medical Services Branch, Health and Welfare Canada; Donald Obonsawin, Director General, Operations, MSB, Health and Welfare Canada; CDA's Executive Director, A. Jardine Neilson and Raymond Laframboise, Assistant Deputy Minister, Corporate Affairs, Health and Welfare Canada.



(Left to right) Dr. Micheline Blain, CDA Governor from Montreal, Quebec, Dr. Pierre-Yves Lamarche, Executive Director and Secretary of the Ordre des dentistes du Québec, Dr. Clyde Covit, First Vice President of the Ordre and Dr. Gilles Dubé, Executive Council member from Lachute, Québec.



Dr. Brad Holmes, CDA past-President (left) chats with ODA past-President, Dr. Denis Wells (right).



A western delegation is shown enjoying the reception's festivities. (Left to right) Dr. Jack Niedermayer, Executive Council member from Regina, Saskatchewan; Dr. Les Allen, CDA Governor from Winnipeg, Manitoba; Ross McIntyre, Secretary Treasurer of the Manitoba Dental Association.



Canadian Dental Hygienists Association Executive Director, (left) Carole Worobey is shown with Laura Mowat, immediate past-president of CDHA.



(left to right) Dr. Ken Skinner, President of the Manitoba Dental Association (left) chats with (left to right) Diane Gallagher, President of the Canadian Dental Hygienists Association, Brian Henderson, CDA's Director of Accreditation and Ellen Brownstone, president-elect of CDHA.





Dr. W.R. Thompson

A five-member task force, which includes Dr. W.R. Thompson, a CDA past-President (1982), has been formed to study the future of the Fédération Dentaire Internationale (FDI).

The Task Force's Chairman, Dr. John L. Bomba of Philadelphia is a past-President of the ADA. Dr. Bomba said that "the purpose of the task force is to analyze, review and make recommendations about the objectives and future organization of the FDI."

Additional members of the Task Force are Drs. R. Duckworth, London, England; Thorsten Aggerd, Stockholm, Sweden and Norman Whitehouse, London, England.

According to Dr. Bomba, FDI delegates, officers and member organizations were asked to identify areas which require discussion. "A list of priorities will be developed from these concerns", said Dr. Bomba.

The Task Force will report its findings in October when the FDI general assembly meets in Buenos Aires, Argentina.

**Latex examination gloves** are undergoing an interesting transformation south of the border.

They now come with peppermint, strawberry and bubble gum flavors.

The innovation is in response to those patients' complaints about the taste of the latex gloves.

As more and more dental personnel are wearing the gloves in the interests of infection control, the suppliers of the gloves have taken up the gauntlet, and have begun to supply the various flavors. This is also in

response to comments from some patients who don't like the smell of the latex rubber.

One dentist thinks the issue is incidental. He believes that when the patients have the glove-wearing concept explained, "then taste becomes a minimal consideration."

**Dr. Lois Cohen** was the recipient of the first Distinguished Senior Scientist Award of the International Association for Dental Research (IADR).

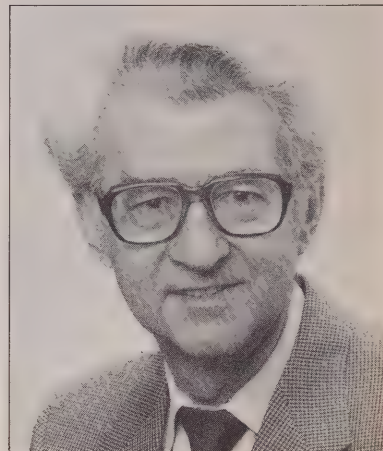
Dr. Cohen, who is Assistant Director for International Health and Chief of the Office of Planning, Evaluation and Communications for the National Institute of Dental Research (NIDR) is a sociologist. She received the award for her work in establishing behavioural and social sciences as an integrated part of dental research. Included in research in behavioural and social science in dentistry are studies of such subjects as dental services and related manpower and organizational constructs; environmental influences from fluoride to social, economic and political structures and individual practices and lifestyles.

The author of more than 90 research papers, Dr. Cohen has also co-edited four books.

**Laval University** recently held a symposium on the evaluation of dental students.

The symposium was a follow-up on the ACFD Summer Teaching Institute, and was supported in part by the Canadian Fund for Dental Education, the Faculty of Dentistry at Laval and the clinical dentists' association at the Faculty.

Over 30 dental clinicians attended the symposium and workshops. Speakers



Dr. Gordon Nikiforuk

**Dr. Gordon Nikiforuk** has been elected to a two-year term as President of the Royal College of Dental Surgeons of Ontario.

A graduate of the University of Toronto, Dr. Nikiforuk was born and raised in Saskatchewan. In addition to his dental degree, he is also a graduate of the University of Illinois, with a Master of Science in Biochemistry and a specialty certificate in Paedodontics. A former dean of the Faculty

included Gerald of Scallon of Laval, Jean-Jacques Ferland, also of Laval. Mr. Richard Lewis was invited from the University of Windsor. He is a professor in communications at that institution. Workshops were given by professors Sylvie Morin, Benoit Souci and Monick Valois.

From all reports, the symposium was deemed to be highly successful.



From left to right: Mr. Benoit Souci, committee member, Mr. Gérard Scallon, conférencier, Mr. Jean-Jacques Ferland, conférencier, Mr. Richard Lewis, animateur, Mrs. Monick Valois, committee member, Mr. Jean-Yves Turcotte, directeur de l'École de médecine dentaire, Mr. Paul Jean, coordinator, Mrs. Sylvie Morin, committee member.

of Dentistry at the University of Toronto, Dr. Nikiforuk has also been President of the Canadian Association for Dental Research. He is also currently a Trustee for the Canadian Fund for Dental Education.

Dr. Nikiforuk is married with two children.

**The newest member of the Fédération Dentaire Internationale is Pakistan.**

The Pakistan Dental Association, which represents 350 practitioners, was accepted into FDI membership during the Annual World Dental Congress in Manila, November last.

The Alpha Omega International Dental Fraternity, with 18,000 members, became an affiliate member during the sessions of the FDI Congress.

This has brought the FDI membership to 81 regular and 13 affiliate member associations, in 75 countries of the world.

**Ontario Health Minister, Murray Elston** recently announced improvements to the Northern Health Travel Grant Program.

The Program is designed to provide financial assistance for northerners who must travel significant distances to receive medically necessary services. One of the changes which is effective immediately, will permit dentists and optometrists to authorize grant applications. Other changes include a reduction in the one-way distance requirement for medically necessary travel to 250 kilometres from 300 kilometres, as well as the inclusion of travel to addiction programs such as residential alcohol treatment centres.

In making the announcement, Mr. Elston said that "the Northern Health Travel Grant Program has been instrumental in improving access for northern residents to necessary medical services which are unavailable in their community."



Hon. Murray Elston

## PACIFIC DENTAL FEDERATION EXECUTIVE MEETS



Pictured from left to right: Dr. Bruno P. Martinello, First Vice President (Edmonton, Alta.), Dr. Gilbert E. Utas, President (Grande Prairie, Alta.), and Dr. Francis Lock, Immediate Past President (Honolulu, Hawaii), at a recent meeting in Honolulu. The topics of discussion included plans for the future of the P.D.F., as well as the agenda and material in preparation for the House of Delegates meeting to be held at the time of the Pacific Dental Federation convention in Banff, Alberta, June 29 - July 1, 1987.

## CDA RETIREMENT SAVINGS PLAN

Unit values: (Funds are valued weekly)

| Fund              | Unit values as at |                |
|-------------------|-------------------|----------------|
|                   | April 24, 1987    | March 27, 1987 |
| Fixed Income Fund | 55.37405          | 58.09639       |
| Common Stock Fund | 143.68046         | 146.89804      |
| Money Market Fund | 37.21374          | 37.17637       |
| Balanced Fund     | 24.52419          | 25.46046       |

Interest rates:

Guaranteed Fund

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# Resource Centre de documentation

## COMMUNITY AND PREVENTIVE DENTISTRY UPDATE

### DERNIERS TITRES PARUS SUR LA DENTISTERIE COMMUNAUTAIRE ET PRÉVENTIVE

1. Ainamo, J., Tervonen, T. and Ainamo, A. *CPITN-assessment of periodontal treatment needs among adults in Ostrobothnia, Finland*. Community Dental Health, June 1986, v. 3, no. 2, pp. 153-161.
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3. Burt, B.A. *Patterns of community-based prevention programs*. International Dental Journal, March 1984, v. 34, no. 1, pp. 41-48.
4. Clark, D.C. and Trahan, L. *Fluorides for community programs*. Journal of the Canadian Dental Association, October 1985, v. 51, no. 10, pp. 773-779.
5. Clovis, J. *Dental health consultant — a new role in community health*. Canadian Dental Hygienist, Fall 1983, v. 17, no. 3, p. 62-63.
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14. Niessen, L.C. and Douglass, C.W. *Theoretical considerations in applying benefit-cost-effectiveness analysis to preventive dental programs*. Journal of Public Health Dentistry, Fall 1984, v. 44, no. 4, pp. 156-168.
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22. Trull, E.E. and Deal, T.S. *A community based dental program for senior citizens*. Illinois Dental Journal, July-August 1986, v. 55, no. 4, pp. 258-259.

One copy of the above articles is available at no charge from the Library to all CDA members. Non-members will be charged \$5.00. This bibliography was generated with the help of MEDLARS, computerized information retrieval system for the Health Sciences field, which has been operational in the library since February 1982, and is at the disposal of all members.

La bibliothèque de l'ADC offre gratuitement à ses membres et pour \$5.00 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS, un système informatisé de recherche bibliographiques pour les sciences de la santé. Ajouté à la bibliothèque en février 1982, ce système est à la disposition de tous les membres.

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# Book Reviews

## MANUEL D'ENDODONTIE

E. Laurent, J. Lombard, F. Roth,  
J.-F. Rozet et G. Sauveur

Masson Éditeur, 1986  
Paris, France  
142 pages

Volume français d'endodontie, de cent quarante-sept pages et divisé en treize chapitres, recouvrant ainsi la quasi totalité des diverses procédures de l'endothérapie clinique, à l'exception toutefois du blanchiment dentaire.

Travail original d'une équipe d'enseignements universitaires, qui se veut absolument "pratico-pratique". Et, comme les auteurs l'admettent eux-mêmes, il est dépouillé de tout aspect théorique. Discussions, digressions, bibliographie et radiographies sont intentionnellement omises afin de conserver son orientation clinique. Les illustrations, essentiellement en noir et blanc, sont nombreuses, claires et explicites. Mais peut-on vraiment comparer la valeur didactique du croquis schématique d'un canal latéral, d'un dépassement de cône, d'un instrument brisé dans le canal, des lésions pathologiques périapicales, des structures anatomiques, etc., à leur image radiographique?

Aussi, le début du troisième chapitre est composé de définitions théoriques de termes tels: aseptie, antisepsie, etc., ce qui en réalité est beaucoup plus approprié pour un ouvrage complet de la matière que pour un livre de ce calibre. Peut-être qu'après tout un simple tableau schématique listant d'une part les différents items et instruments nécessaires à l'endo clinique, et d'autre part la ou les techniques de contrôle antimicrobien de choix; le tout, accompagné de quelques notes explicatives, serait suffisant.

Idem pour le chapitre de l'anesthésie qui se veut un résumé exhaustif de l'anesthésiologie locale bucco-dentaire en général, au lieu d'être un simple guide protocolaire des techniques fondamentales et supplémentaires propres à l'endodontie pratique. Les instruments intra-canaux, quoique très bien décrits, sont pour la plupart, à l'exception de ceux de Kerr, de fabrication euro-

péenne, très peu connus sinon inexistantes sur notre marché. Disons aussi que le premier paragraphe de ce chapitre laisse sous-entendre que du côté Nord-américain, seuls les instruments de Kerr garantissent et respectent les normes. Ceci pourrait fausser l'impression du lecteur Québécois qui est exposé à d'autres marques nord-américaines d'instruments, qui respectent également les normes de l'A.A.E. Et pourquoi donc les termes de "Heat Carrier" et "Plugger" n'ont-ils pas été traduits par "porte-chaleur" et "fouloir", puisque "File" et "Nerve-broach" sont traduits par "lime" et "tire-nerf", et qu'avec tout le respect pour la langue maternelle de W. Shakespeare, cela fait plus d'un siècle qu'en français on parle d'un fouloir à amalgame et non d'un plugger à amalgame?

Le chapitre de la préparation biomécanique est à la fine pointe de la description écrite des techniques opératoires, et rares sont les ouvrages français et même anglais qui traitent et décrivent si bien ces procédures cliniques. La terminologie employée est différente de la nôtre qui se veut une traduction textuelle de l'américain. En ce qui concerne les techniques d'obturation canalaire, on y retrouve une affinité pour la thermomécanique, et peut-être même un certain degré de méfiance pour la verticale, dite de Schilder, technique hautement préconisée dans les trois écoles dentaires du Québec.

Un chapitre tout entier est alloué à l'usage de l'hydroxyde de calcium. Travail si bien préparé et si intelligemment élaboré qu'on croirait que L. Tronstad et J. Andreasen l'ont écrit conjointement, et miraculeusement en français.

En somme, malgré l'excellence de cet ouvrage qui présente si bien les techniques les plus récentes de l'endodontie clinique, disons que l'appellation de "Guide" lui serait beaucoup plus appropriée que celle de "Manuel". Mais hélas, un "Guide d'endodontie clinique" (Traduction française du livre de Richard Bence, Milwaukee, U.S.A.) existe déjà sur le marché francophone! Et quoique pour les praticiens canadiens d'expression française, ainsi que pour les étudiants des écoles dentaires du Québec, il existe, et depuis longtemps déjà, des

ouvrages similaires édités par les presses universitaires, donc à un prix exceptionnellement compétitif et qui suivent une terminologie commune en plus de décrire une instrumentation plus familière ou facilement accessible sur notre marché, ce manuel a toujours une place pour tous ceux et celles qui veulent combler leur curiosité intellectuelle et/ou réviser la méthodologie du protocole des procédures d'endodontie clinique.

Léon Lemian, BChD, DDS, MScD,  
CAGS, MRCD(C)  
Responsable, Section d'endodontie  
Faculté de médecine dentaire  
Université de Montréal

## PRODUCING YOUR OWN PRACTICE NEWSLETTER

Procom Inc.  
Professional Communications Inc.  
Madison, Wisconsin  
\$87.00 (US)  
110 pages  
1984

This hard covered, three ring binder format manual, is a guide to publishing a practice newsletter for distribution to the dentist's patients of record. Included are instructions on design, illustration, printing, content ideas, sample budget information, actual paper and typeset examples, typesetting order forms, and examples of actual newsletters.

The publisher stresses that the newsletter should be of high quality and be reader oriented. He indicates that the initial newsletter in a practice will require patience on the part of the dentist but it could be an opportunity for both practice building and building morale by staff involvement.

The book devotes its nine chapters to: getting started, distribution methods, format, printing, paste-up, design illustrations and photography, naming the newsletter, building content and evaluation of results.

The initial activities chapter is well handled. The distribution information refers to the US mail system but is easily adaptable to the Canadian scene. The format sec-

tion is a complete, concise, utilitarian approach and contains a good series of examples. The printing, design and paste-up information content would be invaluable information to aid in dealing with printers when producing a quality final product at the least possible expense. The effectiveness evaluation chapter is well done and contains a glossary of terms and budget advice.

The sample newsletters are of aesthetic quality but do, in some cases include content not acceptable legally or ethically to the Canadian dentist. This reviewer would caution the reader to exercise their own good professional judgement and ethics as to content and to distribution. A patient newsletter if used at all, must be distributed only to the dentist's *patients of record* and must follow not only the letter of the law as it pertains to their jurisdiction but also the spirit of the law. This reviewer would recommend that any newsletter which is to be sent to patients, first be sent to the dentist's provincial licensing body for content approval. With these cautions I would recommend this text as an addition to the reference library of a dentist who is contemplating utilizing patient newsletters.

Dr. Robert A. Brandon  
Assistant Professor  
Division of Community Dentistry  
University of Western Ontario

## A PRACTICAL GUIDE TO HOSPITAL DENTAL PRACTICE

Lockhart, Connolly, Sagert  
& Sonis

Medical Area Service Corporation  
Boston, Mass.  
240 pages  
1986

With his first contact with the hospital, a dental intern or resident gets very confused and lost in an environment which is foreign to him or her but common practice for physicians, medical students and interns. Keeping this in mind, the authors of the book have made a very good attempt to write a concise book which could be useful for the dental intern or a resident, in understanding and providing health care (Dental) for compromised patients. This book also seems very useful for a dentist who wants to work in the hospital as it provides knowhow of the administration, privileges, patient rights etc.

The first chapter deals with bylaws, accreditation, legal rights of the patients, rights of the house-staff and informed consent. The best chapter is the next one which deals with admission, admitting orders, pre-operative notes and pre-operative orders,

discharge orders and discharge summaries. These are the areas where a new dental resident is lost in the beginning and this information is thus vitally important to him/her. This chapter repeats the art of history taking which I presume the resident already should have known.

The third chapter deals specifically with some medical problems and modifications for dental treatment. Diseases are dealt with in a point by point form which makes the reading very easy and could be useful when the patient is already in the chair. The chapter on consultation is again very practically oriented as consulting is a routine which an intern/resident has to deal with every day. It is made clear in this chapter that when you ask to give a consult to a medical department, the dentist should know all the facts before talking to a physician. Some examples are given re: consultation. Dental and medical emergencies which can arise in the hospital are covered in the next two chapters. Effort has been made to cover as many common emergencies as possible without going into too much detail.

Electrolyte and fluid therapy, which a dentist generally is not aware of until he/she starts working in the hospital, is summarized using "normal" tables. Types of intravenous fluids available in the hospital and their dosages are also listed in this chapter. Tables on diagnosing the need for electrolytes and fluids is an excellent source of information available to the dentist.

Chapter eight deals with charts and treatment protocols for different disease situations e.g. infectious disease patients, patients with hepatitis or AIDS, prophylaxis for heart valvular diseases, biopsy procedures, venipuncture, diets etc. This chapter is a mixture of a number of protocols which are needed by the dentist. I feel they could have been dealt with in other chapters. The next chapter deals with useful drug therapy and formulary and is a good summary of indications, contraindications and dosages of the drugs. The last chapter gives laboratory tests and the normal and abnormal values, for quick reference.

This small book of only 250 pages is a quick reference book for any dentist working in a hospital environment. Those dentists who are there only part time could really take advantage of the protocols, drugs etc. when their memory fails. I would recommend this book very highly.

Reviewed by B.K. Arora  
Assistant Dean, Professor  
and Chairman  
Oral & Maxillofacial Surgery  
and Hospital Dentistry  
University of Alberta

## KINOSHITA'S COLOUR ATLAS OF PERIODONTICS

American editor: C. Rosa Wen

Ishiyaku EuroAmerican Inc.  
St. Louis, Missouri  
404 pages, 1985  
1,160 Colour Illustrations  
\$150. US

When in dental school, I often wondered what periodontists did *besides* scraping teeth. Kinoshita's Colour Atlas of Periodontics vividly illustrates that there is more to periodontal therapy than the turn of the wrist and the flick of the calculus.

Early chapters provide brief introductions on the periodontium in health and disease. The choice of clinical material is excellent and virtually every illustration clearly shows that which is intended.

Next are chapters on examination and diagnosis which are well laid out and readily followed. An overlay sheet is used to demonstrate how a complete periodontal charting is derived from examination. Techniques of probing periodontal pockets and calculus are illustrated in the kind of detail that students would find useful. Graduate students might find the section on clinical indices and electronic measurement of tooth mobility quite interesting. However, some of the research presented and the more detailed descriptions of techniques may not be of general interest.

The atlas continues with remarkable pictorial clarity and concise summaries of treatment planning, sanitive therapy and initial occlusal treatment. Although this material is covered well in currently popular textbooks (e.g. Lindhe's Textbook of Clinical Periodontology), the large, clear, colour photographs and the step-by-step approach used to illustrate all the techniques will provide the reader with a much better idea of how periodontal therapy is performed.

Later sections address periodontal surgical procedures and occlusal adjustment in considerable detail. The last quarter of the book is devoted to clinical management of early through advanced periodontitis cases. Many of the cases shown are remarkable in terms of the excellent response produced by the therapy. The authors are also careful to include some cases that have failed in order to show what can go wrong with treatment and for what reasons.

On balance, Kinoshita's Colour Atlas provides a somewhat mechanistic overview of periodontal therapy in that the biology of the periodontium is not well explored. However, because of its excellent photographs, choice of material, lay-out and attention to detail, I think that this Atlas would be useful for the undergraduate student with a



keen interest in Periodontics or for the practicing dentist who would like to refresh her/his memory of how a particular technique might be approached.

*This book was reviewed by  
Dr. Chris McCulloch  
University of Toronto*

## ORAL HISTOLOGY: INHERITANCE AND DEVELOPMENT

D.V. Provenza and  
W. Seibel

*Lea & Febiger  
Philadelphia, PA  
1986, 485 pages  
\$56.50*

This book represents a novel approach to the presentation of relevant topics in oral anatomy to the undergraduate dental student. Chapters describe most anatomical topics currently offered to the dental student: basic histology and cytology, genetics, embryology, oral histology, and anatomy of perioral structures.

This is a multiauthored textbook, Drs. Provenza and Seibel writing most of the chapters. Contributions from the follow-

ing authors are also included: Dr. J.R. Swancar, Enamel; Dr. T.M. Hassell, Periodontal ligament; and Dr. A.R. Hand, Salivary glands. Chapters are quite variable in their detail, quality of illustrations, and clinical relevance. "Salivary Glands" by Dr. Hand, is the most comprehensive.

This chapter clearly describes and illustrates the histology and physiology of salivary glands. It is an excellent reference chapter for the student, practitioner, or educator. "Enamel" by Dr. Swancar and "Cytology and Inheritance" by Dr. Provenza are of equivalent quality. However, other chapters are often less clearly written, are repetitious and contain outdated material. In many instances, for example, in "Embryonic Development", diagrams have very small labels which are difficult to read.

The most disappointing section involves several chapters in oral histology, the major subject of this textbook. Photographs are often of poor quality, those of mineralized tissues being the most difficult to interpret. Photographs sometimes are not clearly labeled. Some information and terminology is either outdated or not of general usage; for instance, the terms "resorption lines", "mineralizing cementing substance", "acid mucopolysaccharide" and "cell sap"

are used throughout. References are provided at the end of chapters, but are often outdated. Clinical correlative information is scanty in many chapters, however, "Odontogenesis" and "Pulp" do have detailed and relevant correlative information.

Evaluation of a textbook involves two processes: 1) evaluation of the textbook content and 2) comparison to other available textbooks. Compared to other textbooks of oral histology and embryology, this book is not as clearly written, topical, or as well illustrated as others. However, it does contain some detailed information; for example, a very good description of the periodontal vasculature, a subject not covered in equivalent detail in other textbooks of oral histology. "Basic Tissues" lacks the detail of many textbooks of general histology and organology and, thus, could be used to best advantage as a review chapter. I was often confused by the literary style of this book and I predict that students would also have problems with certain topics. However, this book does contain some excellent chapters which make it a valuable reference and a worthwhile addition to one's library.

*Reviewed by Dr. Roger B. Johnson  
Associate Professor of Anatomy  
University of Manitoba*

# What's Under Your Restorations?

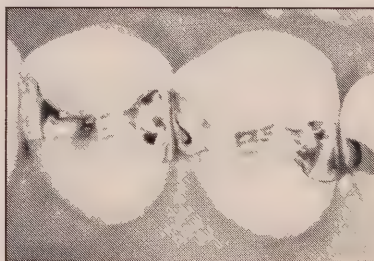
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<sup>1</sup> Brännström, Martin, Odont DR. Communication between the Oral Cavity and the Dental Pulp Associated with Restorative Treatment. *Operative Dentistry*, 1984, 9, 57-68.

<sup>2</sup> Meiers, J.C., and Schachtele, C.F., "The Effect of an Antibacterial Solution on the Microflora of Human Incipient Fissure Caries," *Journal of Dental Research*, January, 1984, Vol. 63, No. 1.

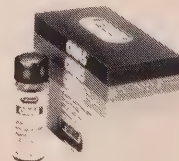


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# Specialty Features

## THE PATIENT AND PROFESSION AT RISK... ALTERNATE DELIVERY SYSTEMS

*Prepared by R.K. House & Associates for the  
College of Dental Surgeons of British Columbia*

### Introduction

In September of 1985, the Council of the College of Dental Surgeons of British Columbia recognized that a number of issues were arising which were relevant to the delivery of dental care to patients. Specifically, non-dentist owned clinics, entrepreneurial dental care delivery, and other similar alternative delivery systems were being seen as becoming a factor in Canada, although they had been observed in the United States for a number of years.

The Council, therefore, created a Committee to study the alternative delivery systems in the United States and other parts of the world as well as Canada, and develop a report for the use and information of the Council and the members of the B.C. College.

After considerable study, the Committee reported to Council and identified particularly that capitation, PPO's, and third party corporation clinics seemed to be the major thrust of alternative delivery. In each case, the three alternate systems had what the committee perceived to be hazards to the public and the profession inherent within them. The Council therefore instructed the Committee to develop an information package aimed at the profession that would help dentists to understand the issues and be able to inform their patients.

The Committee, under the direction of Chairman, Dr. Larry Rossoff, was authorized to enlist the services of R.K. House & Associates, economic consultants for the College, to help develop the information. The considerable contribution of Dr. Larry Rossoff to the brochure's development and research is gratefully acknowledged. The following article titled "The Patient And Profession At Risk" was published by the College as a brochure and given to every dentist in the province in the fall of 1986. Approximately 400 copies were also provided to the two principal dental insurers in British Columbia who issued it to their

clients. The College has received many favourable comments with regard to the information contained in the brochure and it is hoped that the Journal readers find it equally useful.

### Alternative Delivery Systems: The Patient and the Profession at Risk

Rumours have ricocheted through the profession over alternatives to the traditional private practice. We have all heard that the insurance companies are "getting into dentistry", or that franchise operators are going bankrupt, making a fortune or cutting fees, that unions are going to have dentists on salary and that fee-for-service plans are being converted to capitation plans. Sorting out the rumours from the reality is frustrating; the reality keeps changing and the rumours keep multiplying. One thing, however, is certain: the threat of major change within the profession is real.

### The Alternative Delivery Systems Committee

Safeguarding the welfare of the patient is a mandated legislative responsibility of the College. If modalities of delivery or payment for dental services threaten the welfare of the patient, the College, in the discharge of its responsibilities, must be concerned, but the College, like virtually everyone else, needs to sift the facts from the fancy. It created the Alternative Delivery Systems Committee to undertake this task. If the present climate continues, it will be a Committee whose work is never done.

Since its inception, the Committee has studied developments in the United States, eastern Canada and of course in British Columbia. Alternative delivery systems have existed long enough in the United States for it to be possible to draw some conclusions. The Committee recognizes that

each practitioner must resolve these issues personally; it cannot say to professionals "do this" and "don't do that", but it can provide relevant information for each member of the profession.

The Committee does believe, however, that its own findings may be helpful to individual dentists. The position of the Committee is easily summarized: Broadly speaking, the Committee is extremely skeptical about the alleged advantages of the "alternative delivery systems." It believes that they pose real dangers to the health of patients and to the welfare of individual dentists. There are two reasons for this concern. The first is that the alternative delivery systems generally introduce a type of corporate, institutional or bureaucratic control that may be primarily concerned with "profitability" and not with the clinical needs of the patients. The Committee does not see this as beneficial and can foresee many instances in which it may actually be inimical to the welfare of the patient. Many members of the profession now see the intrusion of traditional third party carriers into their practices as a problem and the alternative delivery systems that are now being proposed intensify these problems.

The second general reason why the Committee views the proposal for alternative delivery systems with concern arises because of the diffusion of responsibility and the dubious ethical position in which some dentists may be placed. Under the traditional structure of private practice the responsibilities of the patient and the dentist are well defined and understood. The request for treatment and the rendering of treatment creates an implicit contract between two parties directly concerned; the rights and expectations of both patients and dentists are clear. Under some of the alternative delivery systems the dentist is not always in a position to render the type of treatment he judges as most suitable for the patient and yet under some contractual



arrangements he is expected to bear all the responsibility for treating the patient. Both the dentist's and patient's roles are more complex because the contractual relationship is more complex. The Committee does not believe that these more complex arrangements and the obfuscation of responsibility are to the advantage of the patient or the dentist. It does, however, appear to confer an advantage on the entrepreneur who operates some of these schemes.

The advantage gained by the entrepreneurs is at the expense of the dentist. This is most clearly seen in the case of capitation in which the dentist is forced to bear the risk traditionally assumed by the insurer. This change of role could be destructive both for the individual patient and for the profession as a whole.

The last major concern of the Committee is, perhaps, a pragmatic one rather than a matter of pure principle. In the Committee's view the proposal for the compensation of the dentist under some of these schemes is woefully inadequate. Under some specific proposals it would appear that the level of compensation would be insufficient to even cover the overheads associated with the treatment of the patient. Some plan operators implicitly acknowledge this fact and attempt to disguise it by suggesting — for example — that not more than 20 per cent of a practice should be billed through a capi-

tation plan. In the Committee's view this is really saying that the 80 per cent of the fee for service patients will be required to cross-subsidize the 20 per cent on capitation.

The overall conclusion that the members of the Committee have come to is simply this: If you are interested in participating in an alternative delivery system *be very cautious*. In spite of the claims of some of the salesmen that are promoting these schemes, they have not been developed with the welfare of the dentist in mind.

## What are the "Alternative Delivery Systems"?

In the most general sense an alternative delivery system is a modality of treatment or payment that substantially alters the contractual relationship between the dentist and his patients. The rise of third party insurers such as MSA, CU&C and the insurance companies did not alter the traditional patient/dentist relationship because dental insurance was really nothing more than a means for the private patient to "finance" his dentistry. In fact, while there is sometimes pooling of risk among patients, some of the plans are really more in the nature of "prepayment" rather than insurance.

In British Columbia, many dental insurers operate a number of plans not on the basis of "insurance" but rather on a "cost plus" basis and in these cases they are administrators rather than insurers. To the extent that any true insurance risk is borne by any party, it is ultimately borne by the employer or by the union trustees, not by the "insurance companies". As is suggested below, at least one of the alternative delivery systems — capitation — requires the dentist to assume this insurance risk. Thus, we find that an alternative delivery system can be created either through institutional or ownership changes or through changes in the modality of payment. The institutional changes are, however, the least subtle and therefore most readily understood.

## The Salaried Dentist: A New Corporate Citizen

The most readily understood and one of the most radical changes in dentistry is the dentist who is employed by a corporation or union to provide services only to Company or union members. Under such a scheme the dentist may work on a straight salary or on a salary plus commission basis in facilities owned by his employer and with staff provided by the employer. In British Columbia, a dentist or corporation wishing to engage in this type of practice would have to receive approval of either the College or the B.C. Minister of Health. This type of alternative delivery appears to have major drawbacks from the point of view of the

patient; he is not free to choose his dentist under such a plan and the type of benefits he could receive "free" may be strictly prescribed. As an employee, the dentist is potentially subject to direction or control by non-dentists and it is possible to visualize conditions under which clinical decisions or procedures could be compromised by budgetary or non-dental considerations.

A variation on the "employed dentist" theme was proposed by CU&C and rejected by the College Council. CU&C proposed to construct a clinic, hire staff and employ a dentist on a salary/commission basis to provide treatment. The clinic was to be open to the public. While such a scheme was free from the objection that patients did not have a choice of dentists, it clearly raised the possibility that the fusion of the "insurer" with the provider could lead to compromises in treatment.

The Canadian Federation of Labour also expressed an interest in creating a chain of dental clinics across the country with the primary intention of treating its members. The clinics were, however, intended to be open to the public on a fee-for-service basis. The dentists, however, were to be employees of the clinic.

Recently, it has been announced that London Life will acquire a 40 per cent equity interest in Neighbourhood Dental Service Ltd. of Ontario (NDS). NDS will hire dentists, but London Life will participate in the management of the clinics. London Life intends to have about 65 clinics across Canada within the next two years and to be able to sell prepaid capitation plans nationally to employers. It may be expected that London Life would attempt to buy into existing practices through NDS. Obviously other insurance companies will have to consider following this lead. From the press releases describing the ownership arrangements, it would appear that Council would have to grant NDS the right to practice dentistry as a corporation before such clinics could be established in B.C. These developments in Eastern Canada are indicative of the pressure that may soon be felt here.

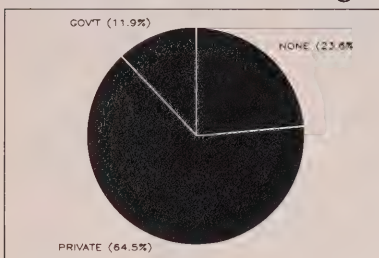
Some companies and unions in the United States have tried the "company clinic" but the results have not been impressive. Disillusion appears to have arisen with this approach because cost savings were not realized.

This approach is only feasible when there is a large concentration of employees in a relatively confined geographic area. Mill towns, for example, could be targets for such proposals. In these cases private practice dentists could be threatened because of a sharp reduction in the available patient pool.

If you are faced with such a proposal you

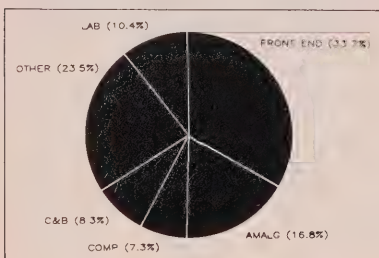
## DIAGRAM I

### Current B.C. Dental Coverage



## DIAGRAM II

### How The Patient Spends His Dollar



should contact the company or union and indicate that the College would like to discuss the proposal. The College, through the ADS Committee will then make a presentation and outline the problems with the company clinic approach and provide an economic analysis of the salary vs "direct" reimbursement approach.

## The PPO: Let's Dance Said the Spider to the Fly

The company or union clinic exposes the company or union to various risks and headaches that running a dental clinic entails. Dentistry is an area about which they know very little. Rather than build its own clinic, an easier route is to contract for a dentist to provide services to the covered group. The contract is the key.

Usually a contract is entered into because both parties hope to gain something. It is an agreed upon exchange or trade. Under a Preferred Provider Organization (PPO), what is traded is very simple. The company or union agrees to trade a captive patient pool for concessions in fees or services rendered. In such a case, the company or union, is merely recognizing one of the corollaries of the law of supply and demand. When the supply of dentists is large, a powerful coalition of patients — company or union members — has real bargaining power. This bargaining power enables it to extract concessions from the dentist in return for something the dentist wants — a guaranteed patient pool.

From an ethical perspective the P.P.O. entails many of the same problems that the salaried dentist does. The existence of a contract between the "insurer" and the dentist, especially if the dentist is encouraged through the contract to monitor costs for the insurer means that the patient cannot be sure of the quality of the care that is recommended.

The way in which P.P.O.'s have been introduced to some communities is also alarming. Organizers have approached dentists with the offer of becoming members of a P.P.O. and suggested that if they do not, the offer will be made to someone else and that the dentist can expect to see his patient load decline. To become a member of the P.P.O., the dentist must sign a contract agreeing to reduce fees and a variety of other conditions and in some cases must also pay a substantial initiation fee. This unsavory practice often is unknown to the covered group which believes it is paying for the services of the plan organizer through its subscription fee. In fact, it appears that some promoters have claimed to have dentists and groups already "signed up" when this indeed is not the case. Patients may be pressured into getting into a P.P.O. because

they fear they will lose access to "the best dentists" and dentists are pressured because they fear the loss of their patients.

If you are approached and asked to join a P.P.O., it would be advisable to contact the other dentists in your community and the union or company groups to determine what the promoter has claimed or proposed to others. Open communication between dentists, patients and plan trustees is probably one of the best defenses against the less scrupulous P.P.O. promoters.

It would be unfair to question the motives of all P.P.O. promoters, but it should, nevertheless, be recognized that the attraction to the dentist of working with a P.P.O. is that it provides the dentist with a "captive" patient pool. Organized dentistry must carefully question whether it should lend support to institutional structures that limit the mobility of the patient. If it is argued that a P.P.O. makes financial accessibility possible for more patients and dentists are willing to cut fees to allow for this accessibility, the question has to be asked why fees should not be reduced for the public at large rather than just the members of a P.P.O. To have one level of fees for the members of a P.P.O. and another level for the public is discriminatory and must raise questions about personal and professional ethics.

The economics of any P.P.O. or similar proposal requires very close scrutiny. Few practitioners appear to realize how dramatically a modest reduction in fees will impact upon net income. Any reduction in fees falls entirely on net. With expenses typically running about 65 per cent of current grosses a 10 per cent reduction in fees will reduce net income by about 28.6 per cent; a 20 per cent reduction in fees will reduce net income by 57 per cent and, of course, a 35 per cent reduction in fees would reduce net income to zero. It would be just sufficient to pay for

the overheads of the practice. Diagram IV illustrates the relationship between the percentage of fees received and its impact upon net income. It is an easy exercise to develop a comparable diagram for your own expenses to gross ratio.

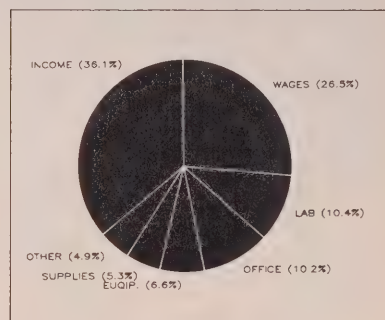
## Capitation: He Who Pays the Piper Calls the Tune

Capitation is a radically different method of paying for dental services. In its purest form, the dentist agrees to provide the patient with all the patient's dental requirements for a lump sum payment for a stipulated period of time. The actual payment may be made on an installment basis — monthly for example; the contracted period of care is typically for three years. The dentist will receive the same payment whether the patient requires little or a considerable amount of work.

Proponents of capitation argue that it helps to control costs because it reduces the possibility of "over-treatment" (which has

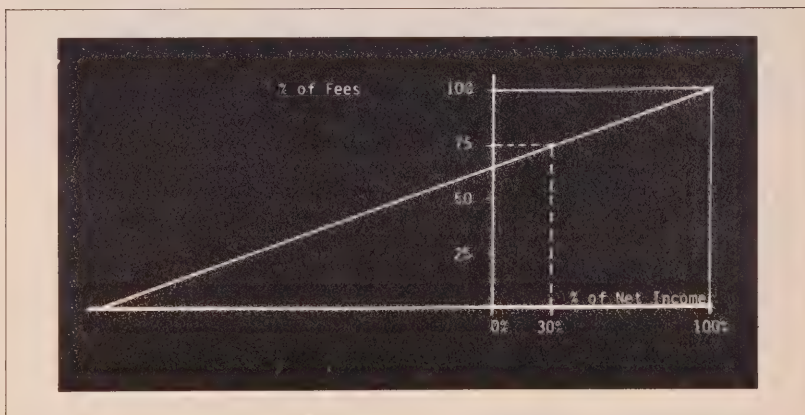
### DIAGRAM III

#### Dental Expenses A Common Problem for all Delivery Systems



### DIAGRAM IV

#### Effect of Fee Reduction on Net Income





never been shown to be a problem in Canada) and creates an incentive for dentists to practice "preventive dentistry" (which statistics suggest that they are already doing). Opponents of capitation argue that the alleged virtues could easily turn into vices and that patients may suffer from under-treatment. While the advantages and disadvantages of capitation may be a matter of speculative argument, two factors are certain: first the concept is being aggressively marketed in Canada and many dentists may have to consider participating in a capitation plan. Secondly, a capitation contract changes the legal responsibilities of the dentist and, among other things, places him in the position of bearing a type of insurance risk.

### Capitation Contracts: Heads You Win, Tails I . . . ?

Unlike traditional fee-for-service insurance in which the dentist simply treats his patients on a usual and customary basis, capitation requires the dentist to enter into a legally enforceable contract with the plan promoter. These contracts have certain features in common but each must be closely scrutinized because they are variations on a general theme. As a service to its members, the B.C. College proposes to provide, on request, a legal opinion of each of the

widely circulated capitation contracts. If you are considering signing such a contract, you should obtain this from the B.C. College. It would then be advisable to consult your own lawyer before signing the contract. Remember, however, that sorting out your legal responsibilities is only part of the issue; you will still have to make the practice management decision about whether you wish to assume the risks and benefits associated with capitation and whether you will be adequately compensated under the scheme.

### Capitation Risk: Baby Needs a New Pair of Shoes

Under a capitation contract you would be agreeing to provide all the necessary services (from a prescribed list of services) required by a patient. Special provisions may, or may not, be made for billing for "extra" services, specialist services or lab bills. At the time you enter into the contract, you will not know what services any individual patient is doing to require, nor do you know whether the eligible patient will actually utilize the plan. If eligible patients seldom present themselves or if their treatment requirements are minimal, capitation may be a "good thing" financially but if the utilization and treatment rates are high, it could be a financial nightmare. With large groups with well defined socio-economic characteristics it is possible to predict, with considerable accuracy, what the procedure mix and frequency will be under traditional fee-for-service. As an individual dentist you will not be dealing with a "large group" but with a relatively small, particular group that may have far from normal requirements. Furthermore, there is an unknown factor that makes it difficult to use historic data series for the purpose of predicting patient and dentist behavior under capitation. To what extent will the change from fee-for-service to capitation change the demand for service or the treatment rendered? Unfortunately, there is not definitive answer to this question.

It is from this complex number of factors that the risk burden arises. If the actual or realized demand exceeds your predicted demand, you "lose"; if it is less than predicted, you "win". The company or union underwriting the costs of the plan bears no risk because it knows with certainty exactly what its monthly payments will be. The risk has been shifted to the dentist.

Some capitation plan promoters have suggested that capitation actually provides greater stability to a practice because the monthly gross revenues from such plans are "predictable". This claim should be closely studied. If the demands of those under capi-

tation actually displace fee-for-service patients, total gross may be quite variable. The fact is, however, that stability of gross income is not the key to good practice management; it is the bottom line, net income that is important. Capitation may introduce some instability into the practice because costs may be more difficult to control. It is uncertainty about the level of costs, not revenues, that puts the dentist in the risk bearing position.

### The Capitation Patient: A Pig in a Poke

Within the general framework of capitation programs there are two distinct variations that present the dentist with different risks. The first of these are plans in which the dentist agrees to accept a patient for a specific period of time and at the time of accepting the patient, the patient may or may not be dentally fit and may or may not require large amounts of "back log" treatments. The patient is largely an unknown quantity. This contrasts with the second type of plan in which the patient must be dentally fit *before* he can become a member of the capitation plan. Such a plan, for example, is being developed by Omaha Mutual and will be available to members of the public. In this case you would certify that the patient is dentally fit and has no immediate treatment needs; if the patient does require work, this would be done on a fee-for-service basis before he could become eligible for membership in the plan. Once, however, you accept him under the plan, you would be responsible for his treatment needs under the contract. Here the patient is a known quantity and if he has been your patient for some time, predicting his future care requirements may be relatively easy.

It appears that Mutual of Omaha attempts to market its plan to the general public (in conjunction with, but not exclusively tied to, Tridont) is stimulating other insurance companies to develop similar plans. The next few years may see growing patient interest in these plans. If your accounting records permit you to do so, you may find it advantageous to compute total annual billing for individual patients so that you and the patient may assess whether a capitation program "makes sense". For many patients, because of the administrative costs of these plans, it will be advantageous to continue with the fee-for-service system.

### Capitation fees: How Much is Enough?

If you are prepared to accept the legal obligations under a capitation contract, the next issue you must assess is the level of compensation. Is it adequate to cover the costs

#### DIAGRAM V

#### Cost of a "Front End" Package

|                      | Frequency | Weighted<br>Cost |
|----------------------|-----------|------------------|
| Recall Exam          | 1.35      | \$ 23.50         |
| X-Rays               | .85       | 12.19            |
| Prophy &<br>Fluoride | 1.61      | 44.21            |
| Scaling              | .80       | 16.71            |
|                      |           | <u>\$ 93.67</u>  |

#### DIAGRAM VI

#### On-Going Treatment Needs: Fee-for-Service

|                        | Frequency | Weighted<br>Cost        |
|------------------------|-----------|-------------------------|
| Recall Exam            | 1.35      | \$ 23.50                |
| X-Rays                 | .85       | 12.19                   |
| Prophy                 | 1.30      | 41.27                   |
| Fluoride               | .31       | 2.94                    |
| Scaling                | .80       | 16.71                   |
| Amalgam<br>& Composite | 2.22      | 96.40                   |
| Crown & Bridge         | .13       | 27.36                   |
| Other                  | 1.05      | 50.63                   |
| <b>Total</b>           |           | <u><b>\$ 270.99</b></u> |

of treating a patient? First a word of caution. Some plan promoters argue that you can afford to accept a substantially reduced fee because the number of patients in the practice will expand. It is tempting to think that new patients represent additional revenue at no additional costs but in general this is not true. If it is true, you should be spending more time worrying about cost reduction and scaling your practice to your patient flow. If you are optimally adjusted and have tight control of your costs, more patients will mean additional expenses. One way of determining whether you are likely to incur additional expenses is simply to look at your appointment book. If you are trying to work a thirty-five hour week and you have less than five or six hours a week unbooked, then a sizable influx of capitation patients will likely add significantly to your practice costs. If you have more than this amount of time unbooked you will likely be able to absorb more patients with only an increase in the costs of dental supplies and a few other items.

On average, however, about 65 per cent of gross revenues goes to cover the costs of operating a practice. In some practices it is less, in others it is more. With this in mind, we are able to determine what a reduction in fees does to net incomes. What we do not know is the services the capitation patient will demand. It is possible to work up to at least a minimal cost for treated patients.

Available statistics indicate that adults under continuous care receive 1.35 recall exams a year .85 x-rays, 1.30 prophylaxis and .80 units of scaling. The cost of this "diagnostic and preventive" package under the 1986 College Fee Guide is \$94. To cover such a package in full fees would require \$7-8 per month. It is more difficult to estimate the restorative or remedial treatment needs of adults but studies commissioned by the College through the Long Range Planning Committee suggest the average adult under continuous care would have \$177 or \$14-15 per month expenditures for other treatment needs. This estimate includes crown and bridge, perio and endo treatment rendered by a general practitioner. Thus, the total costs of treating an adult who has been under continuous care is in the range of \$20 to \$25 per month. These figures will vary from practice to practice depending upon the socio-economic groups treated, access to fluoridated water, age and so forth. It will also vary with the way in which the practitioner has organized his recall system. Procedure frequencies and costs do vary from practice to practice. With this caution in mind, it is possible to determine how the practice may fare under various discounts from the 1986 fee guide.

## Capitation and Quality Control

Capitation contracts usually contain provisions that insure that the patient receives all necessary treatment. Since the patient cannot judge the quality of the care he received, the contract usually contains a provision that permits the plan promoter to appoint other dentists to review records and interview or examine patients. It is also common for the contract to contain a clause that guarantees that all capitation patients will be able to get an appointment within two weeks and will have access to emergency service 24 hours a day.

Under the B.C. College Dentists' Act, the B.C. College has the power to collect relevant data on a plan and it may be expected that if capitation plans are successfully promoted in B.C., the College will become more active in this respect. Some plan promoters intend to create their own "grievance committees" and dentists should be aware that they could possibly be open to double jeopardy if they sign a contract recognizing the authority of such a committee to settle a dispute. The College does not intend to relinquish its statutory disciplinary powers or its responsibilities for safeguarding the welfare of the patient.

On the other hand, the College cannot be placed in a position of "defending" or exonerating a dentist who finds himself in a dispute with a patient or plan promoter unless it has received a formal complaint requiring adjudication under the procedures of the College.

Lastly, the College sees nothing wrong with the proposals to require dentists operating under capitation to submit records and patients to examination or review by their peers. Such a proposal would appear to be a sensible and desirable part of every capitation plan.

Participants in capitation schemes should

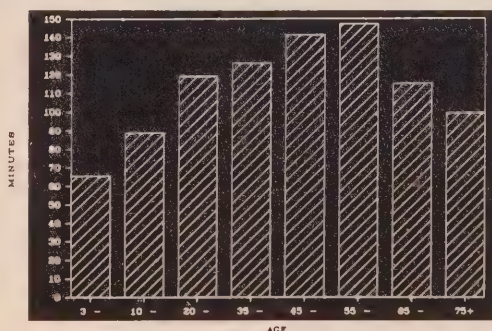
recognize that the monitoring of capitation may be costly in time if in no other sense.

## Ethics and Alternative Delivery Systems

Many of the new delivery systems and particularly capitation require three separate and distinct contractual relationships: the traditional one between dentist and patient, one between the plan promoter and the patient or trustee and lastly, one between the dentist and the plan promoter. Concepts of appropriate professional behaviour have evolved over the decades in which only the dentist/patient relationship was relevant. Dentistry was made a "profession" because specialized training and a demanding code of behaviour were required to protect the patient who, it is commonly felt, does not have the knowledge to judge his own needs or the quality of care he receives. In short, within the profession, the old adage "buyer beware" was not appropriate. The commercialization of dentistry and mechanisms for the provision of the dentist threaten to compromise the unfettered and independent judgement of the professional. The question must be asked: Under a salaried arrangement, under a P.P.O. arrangement, or under a capitation arrangement, just for whom does the dentist work? Is it unambiguously the patient? Under the traditional fee-for-service modality, the dentist was clearly working for the patient, but under the new modalities of delivery the dentist may, in a sense, also be working for or have obligations to a third party. These obligations may jeopardize the welfare of the patient and what the patient may not know is that the dentist finds himself in the unfortunate position of having to "balance" the obligation to his patient and to his employer or plan. This type of third party intrusion as a result of a plan already occurs when a plan refuses to recognize a

## DIAGRAM VII

### Treatment Needs: Time Requirements by Age Group





new procedure that has won acceptance by the profession. At least under the prevailing condition, the independent dentist can say, "Your plan won't pay for what I believe should be done, so I would like to discuss the alternative with you."

Here is where we encounter the first of the serious ethical dilemmas: If you participate in an alternative delivery system, will it be possible for you to practice dentistry as you believe it should be practiced, or are you apt to be compromised? For example, if, as a salaried dentist, your auxiliary personnel are hired by your employer, how can you be sure to comply with Article 4(h) of the B.C. Code of Ethics:

*"Dentists have an obligation to protect the health of their patients at all times by not delegating or referring to a person less qualified any service or operation which requires the professional competence of a dentist or condoning or being a party to such delegations or referrals. It is the duty of members of the College to be sure that the actions of all personnel within their employ are of a high ethical standard."*

Similarly, there would appear to be a particular danger that some arrangements with P.P.O. promoters could contravene Article 4(j) of the Code of Ethics which states:

*"(j) Dentists shall not pay commission or allow discount in return for patients being referred to them for professional attendance."*

The clause in the Code of Ethics that must give all those who consider practicing in an alternative delivery system plan, cause for thought is 9(c):

*"(c) While not in itself unethical, contract practice becomes so if the contract interferes with the choice of dentist, if the compensation for the services of the dentist is so low that adequate service cannot be rendered to the patient, if the professional services rendered yield profits to controlling lay groups or if patients are acquired by solicitation."*

The Code of Ethics is not intended to oppose innovation in the delivery of dental services, but it does attempt to preserve the independent professional judgement of the dentist so that this judgement may be exercised in the best interests of the patient. Clause 9(c) recognizes that it is better to avoid "arrangements" in which loss of independent judgement may be an issue.

The B.C. College Dentists Act and Rules & By-Laws thereto also contain provisions that could raise questions about the suitability of practicing under some form of new delivery systems. These provisions pertain to advertising and soliciting for patients, what constitutes the practice of dentistry and who may practice dentistry. Collectively, the Act, the Rules & By-Laws and

the Code of Ethics attempt to protect the patient. If you are considering participating in an alternative delivery scheme, you should carefully read each of these and if you have any doubts about your legal, ethical or moral position, you should contact your Registrar's Office.

The College has on record that the intentions of at least one plan promoter may contravene Section 72 of the Act which states: *"72. Except as permitted by the council, the Minister of Health, or by an Act, no corporation shall carry on the practice of dentistry and no dentist, directly or indirectly shall assist or be employed by a corporation for the purpose of practising dentistry."*

It appears that the company in question may, through a contract with the dentist (a P.P.O. arrangement) have been "engaging the dentist to assist the company in the practice of dentistry." Since the company has not been authorized to practice dentistry, a dentist's participation in such a scheme would be illegal.

## An Alternative: Direct Reimbursement

No comment on alternative delivery systems would be complete without questioning why they have arisen and whether there is an alternative. The motivating factors seem to be twofold: a sense among employers, unions and the public that dentistry has become "too expensive" and a sense among entrepreneurs that with the oversupply of dentists, an opportunity exists to exploit a market through the design of new plans and creative marketing.

Surveys support the notion that the public believe dentistry is too expensive. In real terms, fees have declined over the past twenty years. This decline in fees has been offset somewhat by patients demanding more services. The increase in servicing and more intense utilization of third party plans have meant that in some years when fees increased by five or six per cent, plan premiums increased by 16 per cent to 18 per cent. Many patients and employers believe that the escalation of premiums is related to increases in dental fees. Ironically, even if all fees were frozen, premiums would continue to increase.

Some years ago, employers in the United States began casting about for a way to reduce the cost of employee benefits and in response to some proposed programs, the profession in the U.S.A. successfully countered with proposals for *Direct Reimbursement*. These programs have now proven to meet the needs of employers, unions, patients and dentists and each dentist should attempt to inform his patients about the attractive features of direct reimbursement programs.

Direct reimbursement plans are very simple. That is part of their appeal. Under these plans, employers and employees agree for the employer to pay dental benefits for the employee up to a stipulated limit. The coverage may be for one hundred cents on the dollar or for partial dollar coverage. Usually there is no schedule of benefits. The employee goes to his dentist, pays the dentist directly for the work done and then using a receipt from the dentist is, in turn, reimbursed by the employer.

This approach has several advantages. It eliminates virtually all the paper work associated with traditional insurance plans and reduces administrative costs to a minimum. Patients are made fully aware of the cost of their plan and there appears to be some moderation in the demand for some types of services, which of course means further cost savings to the employer.

In the U.S.A., the A.D.A. and others are promoting direct reimbursement. It appears to meet the needs of both the profession and of sponsoring groups who are looking for ways to control costs.

## Who to Contact for More Information:

- 1) College of Dental Surgeons of B.C. . . . . 604-736-3621
- 2) Dr. Larry Rossoff . . . 604-270-9988
- 3) Dr. Mel Sawyer . . . 604-266-8910
- 4) Dr. Don McFarlane . . 604-736-7371

## "Making a List: And Checking it Twice, Going to Find Out Who is Naughty or Nice"

If and when you consider participating in a capitation program, there are certain steps you should take. These include consultation with your lawyer, dentists in the plan and perhaps the College. Above all it is important that you clearly understand how the plan operates and what it may imply for the conduct of your practice. Your lawyer, as good as he may be, will not be able to provide much help in this. Here are the questions you must clearly answer:

- 1) Will the sponsor of the plan be "practicing dentistry" within the meaning of the Dentists Act and does it have authorization from the College to do so?
- 2) Are there any provisions in the contract that contravene provisions of the Dentists Act, the College's Rules and By-Laws or the Code of Ethics?
- 3) Do subscribers to the plan have a dual choice system: can they choose either capitation or fee-for-service?
- 4) Have you reason to believe the plan is financially sound?
- 5) Does the contract limit your right to enter into other contracts?
- 6) Does the contract have provisions guaranteeing accessibility for patients

24 hours a day, minimum appointment times and access to a "contract" dentist during vacation? Will you have to accept another contract dentist's patients when he is absent from his practice?

7) Are there minimum requirements with respect to staff, equipment, insurance, office hours, etc.?

8) What services must be provided under capitation? What services are to be billed to the patient? How are lab charges, specialist's fees, etc. to be paid?

9) What is the capitation rate and how is it revised during the life of the contract? Over the next few years the costs of a dental practice will likely escalate by about 5 per cent per year.

10) How do subscribers select offices? When must they choose a dentist, at the commencement of the contract or when they first need treatment? When will you start to receive payment?

11) Will the patient be dentally fit when he comes into the program or may he have a "backlog" of treatment requirements? Can you refuse to accept a person as a patient?

12) Under what conditions can you terminate the contract or treatment of a particular patient? Will you be free to relocate during the life of the contract? Can you arrange for your patients to be treated by another dentist if you are ill, acquire an associate, reduce your hours of work, etc.?

13) Under what conditions can a subscriber change dental offices, withdraw from the program and what happens to the "splitting" of the capitation fees in this case?

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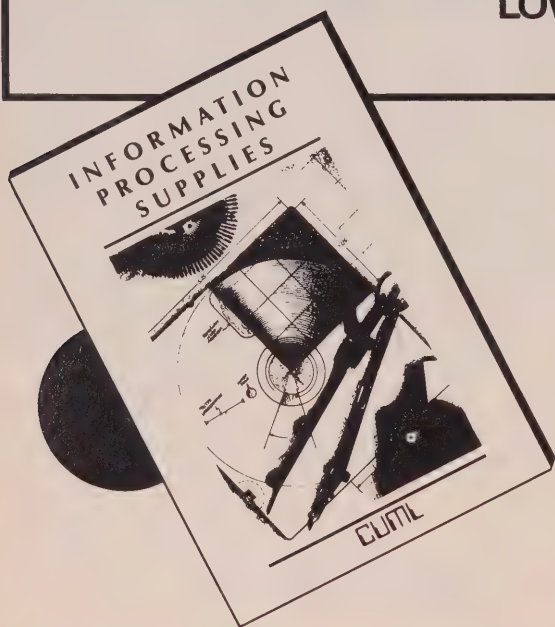
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## RÉCUPÉRATION DES CIRES DENTAIRES: UN PROCÉDÉ DIFFICILE ET INCERTAIN

P. Blais, PhD et J. Dowler, MSc.  
Bureau de la radioprotection et des instruments médicaux  
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### AVANT-PROPOS Récupération des cires dentaires

*Le Conseil des matériaux et dispositifs dentaires a découvert que des dentistes, des laboratoires dentaires et des fabricants de cire ont pris l'habitude de recycler des cires déjà utilisées ou placées dans la cavité buccale pour prendre des empreintes, ajuster des prothèses, etc.*

*Si l'on songe aux risques de contamination bactérienne, cette habitude paraît extrêmement dangereuse. En*

*effet, le recyclage des cires se fait à de basses températures et la stérilisation en est difficile.*

*Le Conseil a demandé à quelques-uns de ses membres d'étudier ce problème et de rédiger de courts rapports. Nous vous en soumettons deux en espérant que les membres de la profession prendront au sérieux les mises en garde qui y sont formulées.*

*Le président  
du Comité des matériaux et dispositifs  
dentaires,  
Dr. Ralph Y. Barolet*

Certains types de cires dentaires sont récupérées et recyclées après usage. Des opérations de rachat et de récupération de cire usées effectuées sur une petite échelle aussi bien qu'à l'échelle commerciale ont été signalées dans certaines régions métropolitaines. Plusieurs sortes de cires sont recueillies mais il semble que les cires pour plaque-base servant à la confection de prothèses dentaires soient la principale source de substances recyclées; il semble que l'on effectue jusqu'à un certain point la mise en commun de différentes substances.

De prime abord, ce procédé peut sembler pratique et attirant. Les cires pour plaques-bases sont utilisées en quantités relativement importantes et le coût de toutes les cires est de plus en plus élevé. Si les cires

sont utilisées avec soin, en général, leur état ne s'altère pas. Leur point de fusion est bas et les produits en fusion sont assez fluides; il est donc assez facile de séparer la cire des contaminants particuliers sans avoir recours à des températures élevées qui pourraient avoir des effets néfastes sur ces substances.

Sous réserve d'un contrôle de qualité adéquat et de l'addition de nouveaux constituants de base au produit traité, il semble que l'on puisse obtenir des substances superficiellement équivalentes aux cires dentaires neuves en retraitant les cires usagées provenant des laboratoires de prosthodontie. Toutefois, après un examen plus détaillé, un certain nombre de problèmes apparaissent: les propriétés mécaniques, les caractéristiques de manipulation et l'inno-

cuité microbiologique des cires retraitées peuvent varier considérablement.

La qualité microbiologique peut être considérée d'importance secondaire dans le cas des produits utilisés en laboratoire ou hors de la bouche comme pour la préparation de moules pour couler des dispositifs de prosthodontie. Même dans le cas de techniques intra-orales et en tenant compte de la nature non stérile de la cavité buccale, les spécialistes dentaires n'ont pas insisté en général sur la stérilité de la plupart des produits dentaires. Toutefois, l'absence d'organismes pathogènes est sans aucun doute essentielle à l'innocuité de ces produits s'ils doivent être utilisés dans la bouche d'un sujet. De plus, on ne peut passer sous silence le risque de contamination du personnel clinique et de laboratoire. Il existe donc des raisons valables pour décontaminer les produits dentaires comme les cires usagées dont la probabilité de loger des agents pathogènes est forte.

Plusieurs types de cires dentaires sont utilisées en dentisterie. Les cires à "inlay", les cires "utilitaires", les cires pour couler, les substances pour les prises d'occlusion, les cires "collantes", les cires de coffrage, les cires à empreintes aussi bien que les cires pour plaque-base sont des substances couramment utilisées fabriquées par de nombreux manufacturiers. Il s'agit de formulations brevetées se composant de résines et de cires minérales, végétales et synthétiques additionnées parfois de matières de charge inorganiques et de



colorants. Leurs propriétés mécaniques et de manipulation clinique sont critiques et sont déterminées, en partie, par leurs teneurs relatives en cire à base d'hydrocarbure et en cire à base de polyester. La présence d'impuretés de faible poids moléculaire et de produits d'oxydation cireux ainsi que la répartition du poids moléculaire des principaux composants ont également des répercussions sur les propriétés physiques. Tous ces facteurs servent à déterminer si une cire convient à des applications dentaires particulières<sup>1,3</sup>.

En prosthodontie, il se peut que l'on recherche des cires dont la texture varie de très plastique et "collante" à dure et cassante. L'expansion thermique, le point de fusion, la déformabilité aux températures physiologiques, le glissement, (fluage) l'écoulement, le rétrécissement et la distorsion en fonction de la formule et la teneur en cendres sont des paramètres importants<sup>2,3</sup>. La mise en commun au hasard des cires modifie la composition du mélange récupéré et donne une substance dont les propriétés diffèrent de celles des constituants de récupération. L'oxydation, la séparation de phase et la décantation mécanique peuvent aussi modifier considérablement la composition et avoir des répercussions correspondantes sur les propriétés mécaniques même dans les cas où la cire recyclée était au départ homogène et exempte d'impuretés solubles.

Toutes les cires ne présentent pas les mêmes risques de contamination dus au recyclage. Les substances de "modélisation" utilisées dans le procédé de fonderie à "cire perdue" peuvent présenter des risques de contamination pour les cliniciens et les techniciens mais rarement pour les autres personnes parce qu'elles sont tenues loin du patient. Toutefois, les cires incorporées dans les produits de prise d'occlusion, les moules à inlay et les dispositifs de prise d'empreinte utilisés directement dans la bouche peuvent contaminer les patients. La muqueuse buccale des personnes qui ont subi une intervention chirurgicale est souvent lésée ce qui augmente donc le risque d'infection.

D'après une étude des pratiques courantes de réutilisation, il semble qu'on n'effectue pas systématiquement la stérilisation de la substance récupérée et que des microorganismes viables présents dans les cires récupérées puissent survivre aux conditions de traitement ou contaminer de nouveau les produits finis. On ne peut pas alléguer que les cires naturelles ou synthétiques sont "stériles" si elles ne sont pas soumises à une ultrafiltration ou à des procédés de destruction microbiologique des microorganismes et conditionnées de façon appropriée pour empêcher la recontamination. Les

techniques de production actuelles des produits dentaires comprennent rarement des procédés qui peuvent être considérés létaux pour le type et le nombre de microorganismes infectieux qui peuvent se trouver dans les cires récupérées. Puisque peu de fabricants soumettent les produits finis à une stérilisation terminale ou surveillent la charge biologique, il s'ensuit que ces produits peuvent être une source de contamination.

Compte tenu des préoccupations actuelles relatives à la transmission d'infection, le retraitement des cires récupérées de procédés intra-oraux ou d'autres techniques pouvant amener une contamination, et leur réutilisation ou mise en vente dans un état microbiologique inconnu sans mises en garde appropriées peut être contraire aux directives en matière d'hygiène professionnelle et aux dispositions législatives concernant les aliments et drogues au Canada et à l'étranger. De plus, les modifications qui ont pu se produire au cours des procédés de récupération peuvent donner des cires ayant des propriétés physiques non déterminées. Un mauvais ajustement de prothèses et de dispositifs dentaires découle souvent de l'emploi de cires dont le comportement est imprévisible.

Dans les cas où la récupération de grandes quantités homogènes de cires usagées peut être justifiée d'un point de vue économique, il faudrait une bonne planification du procédé. Les procédés de fabrication doivent tenir compte de la lutte contre l'infection et des risques auxquels est exposé le personnel. Le contrôle du déplacement des travailleurs entre les lieux de récupération et de production est une autre source de préoccupation. Dans la plupart des cas, une décontamination préliminaire de la cire récupérée dans une zone bien distincte du courant principal de production peut être obligatoire afin de prévenir la recontamination du produit fini. Un contrôle et un réajustement précis de la composition du produit récupéré purifié après une séparation préliminaire des débris et sa refonte à température élevée (pour permettre une première stérilisation) peuvent être essentiels afin d'assurer une conformité aux normes applicables au matériel dentaire<sup>4,5</sup> et une probabilité raisonnable d'innocuité microbienne.

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## Commentaire

### LE RECYCLAGE DES CIRES

#### — NON!

Parce qu'on semble gaspiller lorsqu'on jette des matériaux comme les cires pour les blocs porte-films et d'autres usages, certains recyclent celles-ci. Outre que les avantages économiques sont minimes, les résultats peuvent être désastreux aussi bien pour le patient que pour le dentiste ou le technicien.

Voici quelques faits qui méritent réflexion. Parmi les dentistes canadiens, le taux d'hépatites virales B est 26 fois plus élevé que celui des Canadiens non immigrants (Rapport paru dans *J. Canad Dent Assn*, 52: p. 637-638, août 1986). En Lombardie, en Italie, 79 pour cent des dentistes qui exercent depuis 30 ans ou plus ont été exposés au virus (*Bull. Int. Sieroter Milan* 65: p. 6-13, 1986). Il faut donc considérer les cabinets dentaires en général comme des endroits où il est possible d'être contaminé. De fait, ce sont bel et bien des foyers où peuvent se communiquer toutes sortes de maladies virales et microbiennes.

Pour les objets qu'on ne peut stériliser, il convient d'en utiliser qui sont jetables. Il s'agit d'une précaution de tout premier ordre pour combattre les infections dentaires nosocomiales (nosocomial est un mot utilisé pour parler des infections en milieu hospitalier — un facteur important quand il s'agit de soins de santé). On soupçonne généralement les objets en plastique de produire des infections à la chaîne, ce qui n'était pas le cas des objets en métal. On doit probablement attribuer ce phénomène au fait que les plastiques (et les cires) ne peuvent se stériliser à l'autoclave.

Les cires fondent à une température de 50 à 60° Celsius. Aussi, lorsqu'on les recycle, elles ne sont pratiquement pas stérilisées. Les recycler est donc risquer de transmettre toutes sortes d'infections. Dans ce monde où l'on est prompt à tenter des poursuites, le recyclage des cires passera certes pour une négligence s'il est le fait d'une personne renseignée appartenant au milieu dentaire.

R.H. Roydhouse

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# Specialty Features

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## CURRICULUM CHANGES BASED ON RESEARCH DEVELOPMENTS

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Department of Periodontology

### SUMMARY

**P**eriodontics as a clinical discipline was based originally largely on the clinical experience and observations of a handful of clinicians who foresaw the importance of periodontal health in the overall objective of oral health. As the specialty of Periodontics developed and research findings were integrated with previous beliefs, facts gradually began to replace faith. This process is still ongoing. An increasing number of facets of the practice of Periodontics is now supported by basic and clinical research findings. Yet, because many facts are still missing, periodontal practice still depends on clinical impressions, which must be presented to the students for what they are.

As new research findings become available, it is the responsibility of academic clinicians to adjust the curriculum accordingly. This process should be done, whenever possible, with the primary aim of integrating the new with the old. Care must be taken not to discard too hastily procedures which appear to be effective, but lack a sufficient factual basis, in favor of new methods that are based on research of dubious reliability.

This report contains a summary of our existing curriculum for predoctoral students, and a review of selected examples of recent research findings which have influenced our teaching of Periodontics at the pre- and postdoctoral level.

Before considering the influence of recent research on the teaching of Periodontics, it may be worthwhile to review the contents and objectives of a typical curriculum for teaching the fundamentals of this discipline to a predoctoral student body. The curriculum may be roughly divided into two broad areas. The first consists of the didactic components of the discipline, the second includes the clinical skills required to manage patients.

The curriculum at the University of Pennsylvania has been devised so that the basic science courses present all of the pertinent material the students require before they actually begin their comprehensive course in Periodontics. Nevertheless, it is still desirable to review, summarize and integrate the basic science material with the clinical information that the students receive in the Periodontics course. At the same time as they are presented with the didactic material, the students must be taught the technical skills required for patient management.

Currently the predoctoral educational program at the University of Pennsylvania is structured as follows:

1. An *introductory course* is presented to the students completing their first year to introduce them to elementary concepts of inflammatory periodontal diseases, their diagnosis, prevention and treatment. Emphasis is placed on plaque-associated factors and their control. The main objec-

tive of this course is to teach the students the basic skills needed to seat a patient and perform a periodontal examination, learn the shape, role and utilization of various instruments for scaling and root planing, and instruct and motivate a patient in plaque control. The students work on laboratory exercises, practice scaling on each other and begin to work on a patient. Patient care is continued into the second year as part of a special clinic session in which the neophyte clinician delivers simple dental treatment and gains confidence in interacting with patients. This portion of the curriculum has not been affected to any extent by new contributions from the research sector.

2. Didactic instruction in *Clinical Periodontics* begins in earnest in the Spring semester of the second year through lectures and seminars supplemented with laboratory exercises and limited patient care. When this course begins the students have completed their basic science courses in anatomy (gross and microscopic), microbiology, and the section of the pathology course dealing with inflammation and periodontal pathology. The information provided in these courses is now integrated into a unified concept which presents plaque-associated periodontal diseases as the result of an altered host-parasite equilibrium in which other factors, for example assorted systemic conditions, occlusal factors, etc. . . , participate to varying degrees. The



curriculum then reviews individual categories of periodontal diseases, in each case focussing on clinical features, diagnosis, treatment, prognosis and the need for preventive maintenance. Elements of microbiology, pathology, physiology, pharmacology and wound healing are introduced as necessary. The students' earlier exposure to patient care contributes to making the didactic portion of this course more meaningful. This part of the course is updated on a continuous basis, as new information becomes available through basic or clinical research. The latter may influence the respective emphasis that is placed on various components of the curriculum.

3. In the third year the students receive a series of lectures on *Surgical Periodontal Therapy* and begin intensive training in patient care which will continue into their 4th year. To provide the student with a comprehensive view of clinical periodontics, small groups of students rotate for two one-week periods through the Postdoctoral Periodontics Clinic, where they have the opportunity to observe and participate in the treatment of patients with advanced forms of periodontal disease. They are also able to bring their own patients to this clinic when surgical and other more complex procedures are needed.

The basic objectives of our educational program are to prepare the student to perform the following tasks:

- Recognize and diagnose periodontal diseases.
- Perform a periodontal examination, record the information and develop a treatment plan integrated with other dental services.
- Instruct and motivate patients to achieve acceptable standards of oral hygiene.
- Detect and remove calculus.
- Perform a simple surgical flap for access.
- Appreciate the importance of and institute a maintenance program for treated patients.
- Develop proficiency in treating simple occlusal problems by occlusal adjustment, and simple appliance therapy.

These objectives are quite general and are aimed at fundamental aspects of periodontal disease recognition and treatment that have been validated in part through clinical research. Some of what is taught has not been evaluated objectively and has become part of the body of "knowledge" through tradition or because of trends that periodically emphasize certain techniques or philosophies of treatment. It has now become imperative to validate as many as possible of our clinical activities by means of well designed clinical studies. Unfortunately, these are time-consuming and dif-

ficult to perform, and relatively few individuals world-wide actively contribute this much needed information. However, it is the faculty's responsibility to keep the contents of the curriculum up to date, and modify it as new information dictates. It is also desirable to apply developments in other fields to our particular needs, particularly with respect to the application of technological advances.

I will select but a few examples to illustrate how research has altered our perception of periodontal disease, our interpretation of what we observe clinically, and our rationale for and objectives of treatment. Because of the relatively large body of existing literature in Periodontics and the relatively slow trickle of reliable and significant new information, the changes that have taken place have been gradual. Another reason for the slow rate of change is due, in no small part, to our collective reluctance to reject traditional views and methods. While this reluctance is due to some degree to inertia, it has been reinforced by the repeated failure of many new techniques to live up to their original claims and the clinician's expectations.

It may be practical for the sake of this discussion to consider research contributions as consisting of two types, namely those which can be categorized primarily as technological advances and those which are based on an improved understanding of the biological basis of tissue structure and function. Since the latter have had the greatest impact on Periodontics in the past few years, we will begin with them.

In the last two decades our understanding of the development and structure of the dentogingival region has markedly improved. The clarification of the microscopic anatomy of this region<sup>1</sup> coupled with the realization that periodontal probing is not a reliable estimator of sulcus and pocket<sup>2,3</sup> depth have had a great deal of impact on the management of periodontal pockets. In the 1960's it was common to eliminate periodontal pockets by using periodontal probing as a guide to determine the depth of the pocket, then resecting the pocket wall accordingly. With the realization that probing significantly overestimates the anatomic depth of the pocket, it became evident that classically performed gingivectomies needlessly remove strips of gingiva that could be returned to normal with more conservative methods of treatment.

More importantly, our perception that pockets and osseous defects are the disease and that their removal represents a "definitive" treatment of the disease has been significantly altered.<sup>4,5</sup> Longitudinal studies in Scandinavia<sup>6,7</sup> and elsewhere<sup>8,9</sup> have demonstrated that the bulk of periodontal

disease is associated with bacterial deposits on teeth and that these deposits, or dental plaque, play a key role in the etiology of inflammatory periodontal disease. Furthermore, control of dental plaque is able to prevent the development of inflammatory lesions and is essential to insure proper wound healing and prevent recurrences of the disease.<sup>10,12</sup> In fact, the studies of Rosling et al.<sup>13</sup> seem to indicate that the perceived indications and contraindications for various surgical treatment modalities are almost irrelevant when attention is paid to good plaque control during the postoperative period, as all treatments gave similar results with respect to pocket elimination and gain in attachment level. Pockets and osseous defects are now seen in a more realistic light, as the products of cumulative injury to the dentogingival region, rather than the prime targets of our therapeutic offensive.

The critical need to emphasize plaque control before, during and following active therapy has become obvious to clinicians wishing to minimize their therapeutic failures.

However, longitudinal studies of treated patients have indicated that plaque control, while essential, is not a universal panacea, and that a certain number of patients who seem to practice satisfactory plaque control continue to experience ongoing periodontal breakdown.<sup>14,15</sup> On the other hand, others who have never received any dental care and appear to neglect their oral hygiene do not appear to develop any destructive forms of periodontal disease.<sup>16,17</sup> Possible explanations for these observations include the presence of ill-defined host factors that might predispose certain individuals to more rapid breakdown, or differences in the composition of the periodontal microbiota that could influence the progression of the disease process.

That the periodontal microbiota is complex has been known for many years. Unfortunately, the lack of appropriate techniques to reproducibly sample, culture and enumerate the periodontal microbiota, coupled with an incomplete and sometime misleading taxonomy of oral microorganisms, prevented microbiologists for many years from detecting significant qualitative differences between health- and disease-associated microbiotas.<sup>18,19</sup>

In the 1970s light and electron microscopic investigations of developing plaque<sup>21</sup> and of the periodontal microbiota associated with periodontal health and various forms of periodontal disease revealed that the periodontal microbiota was not composed of a random mixture of more or less similar microorganisms. Instead, the composition of the periodontal



microbiota was found to differ at various stages of maturation, with increasing proportions of Gram-negative and motile organisms appearing with time. Likewise, differences were found in the microbial composition between periodontally healthy and diseased sites. These differences, with increasing disease severity, appeared to replicate those found in the developing microbiota between young and old microbial deposits. Furthermore, significant differences were reported between the supra- and subgingival microbiota.

These research findings demonstrated for the first time that different portions of a tooth surface and different disease states were associated with distinctive microbial mixtures. They opened the door to more sophisticated cultural studies<sup>22-26</sup> which rapidly confirmed that the so-called "non-specific plaque theory"<sup>27</sup> was incorrect. It has become evident that in addition to monitoring the distribution and volume of plaque deposits, microbial composition also has to be taken into account if one is to derive meaningful correlations between microbiological and clinical data.

These investigations were paralleled by immunological studies that reported some associations between clinical conditions and immunological data, at least in certain forms of periodontal disease.<sup>28-34</sup> However, with the exception of juvenile periodontitis, the immunological data have not been as suggestive of microbial specificity in periodontal diseases as the microbiological studies.

The potential impact of these findings on patient management is great. However, clinical applications should be made with caution. For example, the clinician must not lose track of the fact that good plaque control is successful in preventing most types of inflammatory forms of periodontal disease in the majority of patients. Furthermore, the implementation of plaque control is comparatively simple and inexpensive, although motivating patients remains a challenge. The fact that the studies supporting the effectiveness of plaque control are largely based on the non-specific plaque theory in no way diminishes their validity.

Where the specific plaque theory<sup>27</sup> has its greatest relevance is in the management of patients refractory to simple plaque control, who continue to exhibit disease recurrences despite low plaque scores. Observations by Slots and others<sup>35,36</sup> have led to reports that recurrences of periodontitis are associated in a large number of instances with the cultural identification of selected bacterial species occurring in proportions exceeding certain critical values. In separate studies, using microscopic monitoring and a prospective experimental design, Listgarten and coworkers<sup>37</sup> demonstrated that

differential dark-field microscopy of subgingival plaque samples can provide information capable of identifying patients likely to develop recurrences of periodontitis under specific experimental conditions.

For selected patients, laboratory tests may provide valuable adjunctive information that will allow the clinician to prescribe a rational course of antimicrobial therapy. The creation of accredited diagnostic laboratories specifically concerned with the identification of periodontal and other pathogens relevant to dental infections will make it possible for the clinician to monitor the effectiveness of his treatment via regular testing of the patients' periodontal microbiota. Additional studies are still needed to standardize the sampling procedures and determine the specificity, sensitivity and reliability of the testing procedure in different clinical situations.<sup>38</sup>

Such a diagnostic microbiology laboratory has become a reality at the University of Pennsylvania. Currently, it is actively engaged in providing a much needed service to our students and the dental profession, while participating in various research projects aimed at improving diagnostic reliability.

These developments have clearly had an impact on our educational program. The predoctoral course in microbiology is no longer merely another hurdle to overcome before the student can get into the clinic. The curriculum had to be altered to provide the students with an adequate background in microbiology and chemotherapy that will permit the future clinician to understand the complex microbial interactions that exist in the oral cavity, their role in the development of disease, and how they can be modified to the patient's advantage. Laboratory exercises must be devised that will familiarize the student with microscopic and cultural diagnostic procedures, their indications and pitfalls.

Interestingly, the greatest challenge to the dental educator attempting to introduce novel ideas into the curriculum does not come from the students, but from the faculty itself who frequently may lack the necessary background, and the time and willingness to critically evaluate new developments. In-service training sessions may be a practical means of providing the faculty with a general introduction to such new developments.

Another area of periodontal research that has had a significant impact on the curriculum is related to wound healing and tissue regeneration, specifically with respect to attempts at regenerating lost periodontal attachment. Attachment loss has been frequently considered to be synonymous with alveolar bone loss. Undoubtedly, the impor-

ance of radiographs in the diagnostic process may have contributed to this notion. It is not surprising, therefore, that many clinicians over the years focussed their efforts on trying to regenerate bone without giving much thought to the other important tissues of the periodontium, namely cementum and periodontal ligament, that mediate the attachment of the tooth to the alveolar bone.

Numerous methods have been tried to regenerate bone in periodontal intraosseous defects, from mechanical debridement of the defects using non-surgical or surgical approaches, to the implantation of various types of grafts to promote osseous regeneration.<sup>39,40</sup> These procedures have met with varying degrees of success based on the reports in the literature. It is of interest to note that despite a reduction in size of some of the grafted defects, either by osseous tissue or assorted apatites that have recently been promoted as effective in treating periodontal defects, histological evidence indicates little regeneration of the lost ligament with reinsertion of fibres into cementum. The only portion of osseous defects in which true regeneration is seen seems to be confined, in the majority of reports, to the apical region of the defects.

From previous work by Melcher<sup>41</sup> and later by Nyman and collaborators,<sup>42,43</sup> it has become apparent that the cells needed for the regeneration of the attachment apparatus originate from the periodontal ligament. Thus it would appear that for optimal regeneration of the attachment apparatus, defects should be preferentially repopulated by cells of the periodontal ligament, or its precursor the dental sac. This is seldom the case in the procedures that are commonly attempted in order to obtain new attachment.<sup>44</sup>

The most common procedure to gain new attachment is open or closed curettage accompanied by careful root planing of the root surface to a hard and smooth finish. It has been shown that short-term healing following such a procedure generally results in the formation of a long junctional epithelium which may persist for an indefinite period of time.<sup>39,40</sup> Even grafting of such defects with assorted materials does not prevent downgrowth of the epithelium into the defect.<sup>45,46</sup> In effect, the epithelium may actually interfere with the regeneration of the attachment apparatus, since it may act as a barrier preventing cementogenesis and the reinsertion of new fibres to the root surface. Attempts at interfering with epithelial downgrowth, for example by treating the root surface with citric acid, appear to promote external root resorption and ankylosis, at least in the long term.<sup>47,48</sup>



To promote the coronal migration of periodontal ligament cells from their location in the apical portion of the intrabony defect, Nyman and collaborators<sup>42,43</sup> have devised a method that prevents other cell types from gaining access to the root surface, thereby giving the periodontal ligament more time to migrate coronally. This is achieved by inserting a physical barrier in the form of a thin film of inert material that overlaps the alveolar crest between the instrumented root surface and the surgical flap. The method has been applied successfully to the treatment of natural and artificially created defects in animals, as well as in preliminary work on periodontal defects in humans.<sup>49</sup> Further work is needed to develop barriers that are more tissue compatible and ultimately biodegradable.

While this research has not yet had a marked impact on the curriculum, it has altered the way in which we think about the biological basis of regenerating lost attachment. The search for better grafting materials may, in fact, be a vain effort, which could be more productively redirected to developing methods that will promote periodontal ligament proliferation.

As indicated earlier, much effort has been expended in preventing the downgrowth of epithelium in the early stages of wound healing, in order to give connective tissue cells a better chance to become established on the root surface.<sup>50,51</sup> For many years it was felt that once a surface becomes epithelized, it will no longer provide a suitable substrate for a connective tissue-mediated junction. Work from our laboratory has provided evidence that casts some doubt on this assumption.<sup>52</sup> It suggests instead that following an initial downgrowth of epithelium, the latter may give way to a connective tissue junction, provided the area is kept relatively free of inflammation. In retrospect, such a healing pattern would protect the root from being resorbed during the initial stages of the healing process, while providing for a slow regeneration of the lost connective attachment in the long run. This healing pattern could also explain the extensive regeneration of connective tissue attachment that has been reported in isolated cases,<sup>53</sup> many years after the carrying out of a procedure that is known today to heal initially with the formation of a long junctional epithelium.

Another important research discovery that has had an impact on periodontal therapy is technological in nature, namely the development of various composite resins. These resins have proved to be valuable adjuncts for the splinting of teeth in various parts of the dentition.<sup>54-56</sup> They can serve as durable and esthetic replacements in addition to<sup>56</sup> or instead of extra-

coronal wire splints in the anterior region. They are also valuable in the construction of intracoronary splints in the posterior regions, particularly in conjunction with cast metal bars. For this purpose the self polymerizing resins are preferable to those requiring special light sources to achieve polymerization, since the cast bar often interferes with the complete polymerization of the resin in which the bar is embedded. They have also been used successfully with reinforcing strips of metal mesh, particularly in the anterior region.<sup>55</sup> These new techniques must be introduced into the students' clinical curriculum, as they are gradually replacing more traditional methods of provisionally splinting teeth.

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## RESEARCH DEVELOPMENTS AND THE (UNDERGRADUATE) PERIODONTICS CURRICULUM (REACTOR PAPER)

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Central to the educational process in a university setting is the involvement of faculty in both the generation and transmission of knowledge. Research and the discovery of new information which extends our knowledge therefore underlies and supports this process. Probably our knowledge of basic biological processes and the pathogenesis of disease will always be incomplete. On the other hand, once an efficient and effective means of treating or eradicating a disease is found, rightly or wrongly, the impetus to seek new information related to this problem often wanes. In our discussion group there was consensus that at the present time we are still in the process of gaining a sufficient understanding of the etiology and pathogenesis of periodontal diseases and therefore still have an inefficient and incomplete approach to the diagnosis and treatment of these diseases. Under these circumstances the incorporation of research developments into the periodontics curriculum becomes a very important endeavour.

In our group we discussed mainly *how* rather than *what* new research findings could be incorporated into the undergraduate periodontics curriculum. We emphasized the need to help students recognize the dilemma they will face as practising dentists attempting to help their patients despite

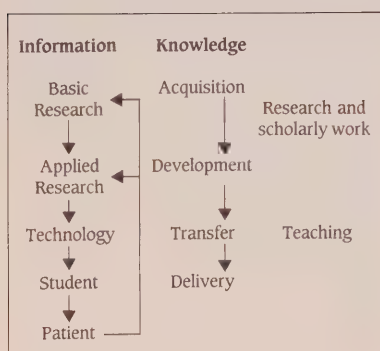


Fig. 1 Dentistry as a system of knowledge (modified from J. Carlos<sup>3</sup>)

the incomplete understanding of periodontal diseases we can provide them. Dr. Baum of King's College said, in the context of medical care, that "you have to cope with this dilemma by conveying an aura of confidence for the sake of your patients while being plagued with nightmares of uncertainty"<sup>1</sup>. While we do have an obligation as teachers to provide students with an approach to therapy and instil in them the confidence that they can help their patients, we also must develop in them an awareness of the uncertainties that exist. In other words, students must develop some appreciation of what information can be "justified as

truths on the basis of experiment" and what information lacks a "sound experimental or investigational base" and is, however, "the best we have and requires further testing"<sup>2</sup>.

In our discussions we used a slightly modified version of a conceptual guide that James Carlos recently described when considering "dentistry as a system of knowledge"<sup>3</sup> (Fig. 1). He considered the acquisition of new information to occur mainly through basic research. Rarely, however, does the information thus gained have an immediate application to clinical practice. Rather, there must be further consideration of this information under conditions which can better determine its usefulness in therapy. This is the developmental stage which is usually termed applied or clinical research. On the basis of this type of research it is hoped that some useful procedure, device or drug will be found. If so, or even if not and the approach is deemed useless or harmful, then this information should be passed on to the student so that the useful therapy can be used in the treatment of his patients and the useless or harmful therapy avoided. This becomes particularly important when therapeutic approaches have arisen on an empirical basis and do not have some sound theoretical base. In our discussions we felt that full-time dental faculty



should be involved in all stages of this system and must be involved with the transfer of new information to students. If faculty are falling short in this regard then the administration of dental schools must provide leadership and encourage programs which better prepare potential and existing faculty members to meet these responsibilities. A good example of the latter was the recent symposium sponsored by the Canadian Association of Dental Research on "Getting Started in Applied Dental Research" and the Association of Canadian Faculties of Dentistry's teaching workshop which followed it. It was also felt important that there be regular faculty development programs at each school and that the administration work at providing an environment that challenges and rewards faculty to be productive educators in the widest sense of that term<sup>4,2</sup>.

Two aspects of how research developments can influence the periodontics curriculum were interwoven in Dr. Listgarten's thoughtful presentation. The first of these relates to our incomplete understanding of basic biological and pathobiological processes. He gave several examples of recent research findings which have or may influence our therapy of periodontal diseases. We referred to this aspect of the relationship between research developments and the periodontics curriculum as "new information, its recognition and acceptance". We felt that full-time periodontics faculty are the essential element in this process; they must interpret new information and highlight important new basic and clinical concepts. Often this will require interchange with other faculty teaching either in basic sciences or other clinical disciplines if the full implications for the curriculum are to be realized. A formal approach to this type of interchange could involve regular forums in which faculty apprise other faculty of the latest developments in their respective fields.

The second aspect of how research developments can influence the periodontics curriculum to which Dr. Listgarten alluded was how to assure or at least encourage that curriculum change deemed desirable actually occurs and influences teaching in a consistent manner at the clinical level. This we referred to as "methods to aid change of the clinical curriculum". It was felt that the most important factor here was the transfer of knowledge to the part-time faculty, since in most schools the part-time faculty are heavily involved in clinical teaching. It was felt that some regular in-service training program involving both part-time and full-time periodontics faculty should be used to achieve this goal.

During our group discussion we also considered a third aspect to the relationship between research and curriculum — namely, developing our students' capabilities to evaluate new research developments particularly at the level of applied research. We considered it important, especially at the undergraduate level, for students to learn the basic skills of evaluation of scientific studies. We need to help them become practitioners who can read the dental literature or listen to presentations and appreciate the need for properly designed studies and can make some assessment of the validity and usefulness of the information presented. As well it was considered important that students be exposed to studies which provide information which underlies or has the potential to influence the current practice of periodontics and to appreciate the limitations of these studies. At the University of Saskatchewan the periodontics faculty has provided a course with the objective of attempting to achieve these goals. An initial series of lectures is given to describe a disciplined approach to reading a scientific article<sup>5</sup>. Stressed are the type of clinical articles describing studies (a) determining whether to use a new or existing diagnostic test on our patients, (b) learning the clinical features and course of a disorder, (c) determining etiology and causation and (d) distinguishing useful from useless (harmful) therapy, materials or devices. These are the types of studies which are the essence of sensing and responding to the need to change one's therapeutic approach<sup>5</sup>.

Students are taught to initially read the title and the abstract in order to determine if the article is useful to their (anticipated) general practice of dentistry. If it isn't, then in theory, they read no further. If they think it may be useful, then they next read the methods and materials section and try to make a decision whether, according to the design of the study, the population studied and equipment needed, the results of the study can be considered valid and useful to them. To determine validity they learn the basic principles of scientific investigation and in particular that of a randomized clinical trial. To assess usefulness, factors are discussed that have to be considered in determining whether that particular procedure is feasible in the circumstances of their practice. Finally, we assign each student or pair of students articles from the recent periodontal literature to present to their classmates in a seminar setting. These are articles chosen to help them realize what we do and don't know about current periodontal therapy. When the students present these papers they attempt to identify the limitations of these studies and come to conclusions on the resultant limitations of

current diagnosis and therapy. On the basis of student course evaluations, it has been apparent that many students are stimulated and enjoy this approach. Just before coming to this conference I was looking over some of the work my son, who is in grade 7, brought home from school. At the end of an essay about elephants was a succinct paragraph entitled "Mating" which I found related to this discussion. He had written, "The mating of elephants is boring. There is no ceremony or dance, they just go at it". I think we have to give our students the chance to enjoy the "ceremony and dance", a chance to think and critically analyze, to experience the fun and stimulation of learning; not only to just "go at it" by the repetitive practice of technical skills.

In summary, the recommendations of our group were:

1. Full-time faculty involvement in research and in the recognition of research developments could be enhanced by improving the research background of clinical faculty. Time to develop these skills and recognition of their achievement should be an important part of the career development system at dental schools.
2. As one aspect of the curriculum review process at dental schools, some type of regular forum should be held in which representatives of the different disciplines explain current concepts in their fields to all other faculty. Equally important is the need for regular in-service training of part-time faculty.
3. Undergraduate students should be taught basic aspects of the methods of scientific investigation and literature review and given the opportunity to develop these skills through evaluation of the periodontal literature.

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# IMPLEMENTATION OF CHANGES IN THE DENTAL CURRICULUM

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## INTRODUCTION

Every active academic area must have times of self-assessment, deleting what is now considered redundant and teaching more of what is perceived as new and necessary for "modern dentistry". In the ideal situation, there would be a balance between discarded material and new curricular content, but in reality we have areas of rapid expansion overtaking those of diminishing importance. The latter must be recognized as a potential impediment to progress if it is wastefully utilizing valuable curriculum time and thus preventing expansion of other growth areas. Can these conflicting situations be resolved in a civilized manner without the establishment of long-lasting enmities between those who "lost" curricular time and those who "won" curricular time?

The purpose of this paper is to suggest mechanisms which provide faculty harmony and avoid the pitfalls leading to frustration and despondence in those striving for change. It requires preparation by those in the area of expansion and a well-structured curriculum committee which is able to fulfill its terms of reference.

## DEMONSTRATION OF NEED (TABLE I)

No matter how zealous the faculty members are in a specialty area or how personally convinced they may be as to the need for expansion of their programs, ultimately they must provide the evidence which supports these needs.

### 1. Accreditation Reports

One of the strongest arguments for the necessity for increased time can be a supportive paragraph in an accreditation report. While a section or a department may have problems convincing others that their needs are real and not only of ambition, the

recognition of this by an external, unbiased committee such as a visiting accreditation team is difficult to refute. A useful document to utilize in such an approach is the Accreditation Standards for Dental Education Programs.<sup>1</sup>

This avenue, however, is fraught with certain drawbacks. Should the arguments for expansion be unsound or the present program have areas of weakness, the subsequent report can backfire. A critical accreditation report can stifle any plans of increased curriculum time for years to come. In Canada, these accreditation visits occur only every four to five years, which is a limiting factor in using this approach.

### 2. Supporting Data

This is one area which is usually well presented — perhaps because statistics and data are often open to interpretation if not manipulation. Specialists in any field can choose which studies they wish to present to support their case and which to ignore. It is often difficult for a Curriculum Committee to refute such data. Demographic studies, new techniques and advances in materials all fall into this category and it is a basic standard requirement for any application for increased curriculum time.

Also included in this category is a comparison between the time allocated in the school's curriculum for a particular subject and that of other dental schools. The choice

of the other schools again can be manipulated, but it is more difficult to disguise this type of biased selection. Most credence is given to comparison with Canadian dental schools, less to those in the United States of America, and little to other "foreign" universities. It is also accepted that certain dental schools will have programs which legitimately excel the norm for time allocation due to such factors as outstanding individual clinical faculty members, active researching groups, or the presence of graduate programs. Thus, it is not expected that all Canadian dental schools should have equal teaching time in all areas.

A valuable reference document when preparing a proposal is the Compendium of Curriculum Guidelines<sup>2</sup>, issued by the American Association of Dental Schools. Although appearing in March 1986, the guidelines for various sections have been published previously in the Journal of Dental Education. Those for Periodontology, for example, were established in 1985<sup>3</sup>. Although these cannot be applied directly to Canadian Universities, it does support North American trends. Hopefully, with the establishment of a Section of Curriculum Co-ordinators approved by the House of Delegates of the Association of Canadian Faculties of Dentistry in 1985, we can anticipate similar guidelines for Canadian Dental Faculties in the near future. To facilitate this, each teaching area should study their respective guidelines, make any necessary changes, and forward these to the Executive Committee of the Association.

### 3. Proof of Present Efficiency

It is assumed that any discipline which feels additional material must be taught in its area will independently review the present utilization of its time. In a well-balanced curriculum committee, there will normally be sufficient informed members to

TABLE I

### Demonstration of Need

- |                                        |
|----------------------------------------|
| 1. Accreditation Reports               |
| 2. Supporting Data                     |
| 3. Proof of Present Efficiency         |
| 4. Financial and Practical Feasibility |



address this problem. Faculty members of the committee may note any lapse in the use of clinical or lecture areas assigned to the discipline, while student members (especially those who have completed the course) can be very perceptive in regard to the efficiency of the course. Indeed, student input is often critical in assessment of time utilization.

#### 4. Financial and Practical Feasibility

In times of greater economic support, decisions on expanding curricular time were based solely on academic justification with little regard for the financial implications. In a Utopian civilization, this is probably justified, but in today's climate of financial restraint and retrenchment this can no longer be the case. It may not be within the terms of reference of a curriculum committee to consider the financial implications of curriculum change, however, it is unrealistic to assume that at some time this aspect will not be discussed whether it be within the faculty at the level of the Senate Curriculum Committee or on the floor of the Senate itself. Indeed, an application for changes in curriculum to a Senate Curriculum Committee often requires that it be accompanied by a statement of the financial implications. If it can be established at the outset that there are no financial increases perceived, either in teaching positions or materials, then the passage of changes through the system can be accelerated.

In a similar practical vein, although it may be sound academic sense to increase the teaching of new or advanced clinical techniques, it may be pointless if appropriate patients are not available. This includes the introduction of such techniques as osteotomies and implants.

Armed with the above supportive material, a specialty area should be able to advance confidently to the curriculum committee with high expectations. All may be lost, however, if the curriculum committee has flaws in its structure or function.

### Structure of the Curriculum Committee (Table II)

At the National Conference on Dental Education hosted by the University of Oklahoma College in 1985 and attended by deans of North American Dental Schools and the chairmen of their curriculum committees, there was much discussion on the role, structure, and function of these committees<sup>4</sup>. There was excellent representation by the Canadian dental schools at what proved to be a most informative event.

Most of the following points on the suggested structure of curriculum committees were vindicated by the discussions which ensued during this meeting.

#### 1. A Committee Elected by Faculty

It was apparent that some deans in the United States saw the curriculum committee as an extension of their personal administration. The Dean appointed the members of the committee which acted more as an advisory committee to himself than to the faculty. During the workshop sessions, however, it became apparent that the curriculum committees which were most effective required the support of faculty and that this was only achieved where the members of that committee were elected by the faculty. A committee appointed solely by the administration, i.e., the Dean's office, produced a "them" and "us" situation. Therefore, it would seem essential that the majority of curriculum committee members must be elected by the faculty which then designates the committee as working for "us".

#### 2. Administrative Representation

While the curriculum committee should not be a "Dean's Committee", its effectiveness is impaired if there is no input from the Office of the Dean. On the other hand, to have the dean as chairman of the committee may appear to be too intimidating and perhaps an acceptable compromise is to have an associate or assistant dean of academic affairs as chairman. This has a two-fold effect. First, the Dean's Office will have direct knowledge of the machinations of the committee and, secondly, the committee will have an indication of the administration's responses to their decisions. This can save much wasted effort on the part of the committee as to what is and is not feasible, especially where there is financial involvement.

#### 3. Undergraduate Representative

In the last decade, it has become increasingly popular to have student representation on all committees. In no other committee is this more appropriate than that of the curriculum committee. They may be described as the stethoscope of the curriculum committee — having the ability to monitor the basic vital signs of the whole academic organization. In particular, the final year student representatives are in a

unique position. Most of their adult life has been involved with jumping through the hoops of the system and in most cases they have experienced other faculties' systems and have colleagues who have participated in others. They may be more sensitive to the acceptable levels of teaching in the university as a whole than are the faculty members. Being close to graduation, they are usually not afraid to state the blunt truths about individual faculty members or the dental courses that are imposed upon the student. If they are sometimes overzealous in their criticism, it is often refreshing to hear this rather than the guarded remarks of faculty members who must live for years to come with the colleagues on whom they are presently sitting in judgment.

#### 4. Alumni Representative

This is one step removed from the student representative in that they are now totally free to evaluate their undergraduate teaching without fear of reprisal. In addition, they can evaluate the relevance of what they were taught to what is happening in what they perceive as "the real world" of dentistry. The requirements of such a representative are that he must have had sufficient practice experience for his opinions to be credible and also he must be seen to present the views of the alumni in general.

#### 5. Licensing Authority Representative

In Canada, we are fortunate that our students are not required to sit provincial board examinations once they graduate with a Canadian dental degree. In the United States of America, State Board Examinations often dictate what is taught in the undergraduate curriculum. This privileged position of Canadian dental schools must not be abused, however, and it would seem to be judicious to have a representative of the licensing authority of the province, as a member, or even an ad hoc member, of the curriculum committee. Since they are legally responsible for the granting of licences for practising in the province, they should be at least aware of what is taught and why it is taught at the undergraduate level.

#### 6. Timetable Sub-committee

Although the curriculum committee is mainly responsible for advising the faculty which areas of the curriculum should be expanded, it must also indicate where in the timetable such increases can be accommodated. Rather than involve the whole curriculum committee, it is more expedient to have at least one member who acts as a timetable sub-committee. It is the duty of this sub-committee to suggest how decisions on curriculum content can be expedited. This often requires negotiations with other departments to re-arrange clinical and

TABLE II

### Suggested Structure of a Curriculum Committee

1. A Committee elected by Faculty
2. Administrative Representative
3. Undergraduate Representative
4. Alumni Representative
5. Licensing Board Representative
6. Timetable Sub-committee

lecturing times and can often be more time consuming and intricate than the initial decision to increase the curriculum. Much time can be saved if the specialty requesting the increased teaching time can at the same time suggest the appropriate time slot and even better if they can have evidence that these changes are acceptable to the other disciplines whose timetable the changes will affect.

It may be noticed that there has been no suggestion of departmental representation within the curriculum committee. This is an intentional omission since it is important that all members perceive themselves as presenting their views as an elected member of the faculty at large rather than of their own discipline. In general, the faculty will use its votes when electing members to ensure that there is some balance not only between the various departments, but also between clinicians and basic scientists.

There are, of course, various additions which can be made to the above committee, such as a representative from the Faculty of Medicine, but such fine-tuning will be dependent upon the individual, administrative, and committee structures of each dental faculty.

Having established how the request for expanding an area of the curriculum should be supported and how a curriculum committee should be structured, all may still be lost if this committee is unable to function effectively.

## Requirements for Functional Curriculum Committee

### 1. Active

To allow changes in the curriculum to be achieved expediently, it is necessary that the curriculum committee be an active one. This requires that the committee is in a general state of readiness to deal with faculty requests on a regular basis. This, in turn, suggests consistent times when the committee meets so that the faculty is aware of any deadlines that must be met. Where the committee is only called when some item of business is urgent, there tends to be laxity in the system and difficulty in arranging a convenient time for all members to meet. Therefore, a timetable of meetings should be established before the beginning of the academic year.

Another impediment to activity can be a curriculum committee attempting to deal with too many subjects as a full committee. It is important that sub-committees be struck to assess any request where it is perceived that an item requires further investigation, but is being limited by the time-tabling of the committee meetings. These sub-committees must be given not only clear terms of reference, but strict deadlines for

reporting back to the main committee. The sub-committees need not be composed of only committee members, but other faculty members can be appointed where their inclusion seems appropriate. Well selected sub-committees can be the sparkplugs of the curriculum committee which allows all requests to be dealt with fairly and efficiently.

### 2. Credibility

A committee's performance is dependent upon the enthusiasm of its members. This is also true of the curriculum committee, and its enthusiasm can be quickly doused if their advice is treated as suspect or rejected by the faculty. The faculty, on the other hand, will only be receptive to their advice if the committee has credibility.

Credibility is one major reason why this committee must be selected by the faculty. It is basically their committee elected by them. Equally so, it is important that the administration, the Office of the Dean, has strong representation on this committee without having control over it. The credibility of the committee will also be enhanced if the elected members are seen to be behaving in an impartial manner rather than supporting their or their department's interests.

The question may be asked as to what can be done to ensure that your curriculum committee is sufficiently active to process your own requests expediently. The answer is to ensure that the members elected are reliable, energetic and likely to respond to the responsibilities of the position.

### Summary

The success of introducing changes into a dental curriculum lies not only in the presentation of supportive evidence, but also in the structure and activity of the curriculum committee. It is important, therefore, that all faculty members strive to ensure that their dental school maintains a curriculum committee that is capable of recognizing the need for change and which has the support to implement such changes.

### References

1. Accreditation Standards for Dental Education Programs. Endorsed in principle by the Commission on Dental Accreditation of the American Dental Association, 1985.
2. Compendium of Curriculum Guidelines American Association of Dental Schools, 1986.
3. Guidelines for the Teaching of Periodontology, *J. Dent. Educ.* 49 (8):611, 1985.
4. National Conference on Dental Education, Management of the Curriculum Response to Change. Co-sponsors American Dental Association and the American Dental Association of Dental Schools.

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## IMPLEMENTATION OF CURRICULUM CHANGES

*Kenneth L. Zakariasen, DDS, MS, PhD  
Dean, Faculty of Dentistry,  
Dalhousie University*

I have been involved 13 years full-time in dental education and I have had to fight the same battles as the Periodontics Chairmen have, i.e. trying to get more time in the curriculum. The particular topic that we covered in our group was really the mechanics of it.

I am going to say something about content towards the end because I have a particular argument with many endodontic and periodontic chairmen regarding content. But I'm mostly going to discuss the mechanics of implementing change once we've decided on change. That's what the first three speakers discussed, i.e. what kind of changes are necessary in curricula. Then, once that's decided I think sometimes the really hard work begins convincing faculty that you should have the curriculum time to actually implement those changes.

There were a number of recommendations that Dr. David Donaldson made that were excellent. While curriculum committees have various duties, they all sound approximately the same in function. However, they really do operate at different levels. Dr. Donaldson's curriculum committee sounds to me like it has a fair amount of power at B.C. and it's probably because he's directed it in an effective way. Too often, I believe, curriculum committees have been directed too much at only timetabling and listening to people who want to add to the curriculum. They have not taken an analytical look at what the curriculum really should have in it. So, we keep adding on instead of adding on and taking away, both of which are extremely important. We unfortunately leave too many things in the curriculum that were passed up by the profession 20 years ago. I really think that curriculum committees need to have a fair amount of power and to do critical, appraisals of the curriculum, not just when asked, but as Dr. Donaldson said, to criti-

cally appraise the curriculum every three to five years. They should examine what's in it and determine what should be left out and what should be kept. That's curriculum committee initiated action, rather than just reacting to somebody's recommendations or questions.

I had first thought that I would simply be giving a formal response to Dr. Donaldson's paper and then I found that we would be working as a task group, so I have amalgamated my comments with those of our task group. I will at the end, present a few of my own thoughts and I will take the heat for those, rather than our task group.

One of the things that struck me in Dr. Donaldson's paper was that if you're going to review the curriculum every 3-5 years, you have to have a standard to review against. There's been some reference to a task force that the ACFD is proposing to look at where dentistry is going, or at least to make an educated guess as to where dentistry is going, in the future. When we have a reasonable projection of how dentistry will evolve, we can hopefully plan our dental education to properly educate students for dentistry as it will be practiced. We need to take a very hard look at the dental curriculum in both our curriculum committees and in our faculties in general as to where dentistry is going and then plan curriculums around that, instead of just adding on.

One of my pet peeves as an endodontist was the inclusion of gold foils in the curriculum. I graduated in 1970 from dental school. We had an inordinate amount of time spent in our clinics and in our pre-clinical labs on gold foils. Few of my classmates did any gold foils when they graduated, fewer patients wanted them and yet we spent all this time on gold foils. My experience in endodontics, at that time, was no pre-clinical lab and my first endodontics experience was a patient for a grand total

of four treated teeth. That was the endodontics experience that the curriculum would allow at that time. It wasn't enough! There could have been more adequate time, but we hadn't got rid of some things that we should have eliminated and then added in what was really needed. Endo, perio, and ortho are all areas that were shortchanged at that time and I expect that in some of our curricula, still are.

Let me discuss the mechanics of the curriculum committee. The makeup of the committee was the first thing that came up in our task group, and one of the things we considered was curriculum committee size. Dr. Donaldson suggested that it should be eight and probably no more than that. I heartily agree! The communication psychologists say that if you go over 8-10, I believe it is, or maybe less, you do not have a very effective committee. Probably eight is a good number to work with. Dr. Donaldson said that it should be an elected group and nobody argued with that. The makeup of the committee, though, did raise a few questions.

Dr. Donaldson suggested that the chairman should be someone from the administration, possibly an assistant or associate dean which we had no problem with. However, it was suggested in our group that it probably doesn't really matter as long as the chairman is willing to be very active. Dr. Donaldson stressed that the committee has got to be active, and must appear that way to be credible. If that's the case, then I think curriculum committees will implement changes that are necessary.

Dr. Robert Turnbull suggested that we have part-time faculty members on curriculum committees. That sounded like a very good idea because these individuals are in practice, they're intimately involved with the educational program and they can shed a lot of light on what we are about as dental educators. Sometimes the alumni represen-



tative that Dr. Donaldson suggested is also a part-time faculty member and then both the part-time faculty and the alumni can be represented by one individual.

There should also be an interaction with the medical curriculum committee. At UBC they have an exchange of minutes. Dr. Donaldson receives all the minutes from the medical faculty and that is especially important where the medical school is in charge of courses in the basic sciences for the dental students. Open communication is vital and must be encouraged.

I talked about the future evolution of dentistry already and I think everyone would acknowledge that we do need some kind of plan on which to base our changes. Without that master plan for the school, and for the profession, we really don't know what we're training in the way of dentists. Some people have gone so far as to say maybe in the future we're going to put dentistry back in the medical school and we're all going to be oral physicians. Dentists would basically go through medical school and then decide on dentistry as their discipline. That's one extreme! If some individuals are thinking that way and others think we don't need any change at all, then we'd better develop some hard data to base our decisions on instead of opinions. Often the people who are the most vocal with their opinions get their way and these opinions may not be based on any substantive data.

We need data to justify additional time in the curriculum when we go to the curriculum committee and, as Dr. Donaldson said, we usually do a pretty good job in that aspect. Sometimes the curriculum committees don't do a good job in analysing the data and we can slip through some questionable things. But, in most cases, I think that they do take a pretty hard look. I know I had to thoroughly justify my endodontics curriculum when I wanted more time in Alberta.

I came into a situation in Alberta where the faculty did not have an endodontist full time in the division and we went from one part-time endodontist running the program to three full-time people. In a short time we had the faculty we needed to run what we thought would be an appropriate curriculum in endodontics and we needed more curriculum time. We had to justify that time and I have to say our curriculum committee was excellent in listening to, and scrutinizing our arguments. They did eventually give us most of the time we needed, but in two phases, as we developed our curriculum.

Our task group also affirmed that we can't just keep adding to the curriculum. We have to add and reduce at the same time. I would like to see curriculum committees initiate some deletions, gold foils being one exam-

ple. We must look at the curriculum critically and see what can be eliminated or reduced. We must then do it and go on!

There is a problem which our group discussed that we probably don't like to acknowledge, but some of the divisions or departments in our faculties have to be brought into the late 20th century in what they're teaching. We have all seen divisions and departments that the practicing profession is far ahead of and those situations must change. We're educating dentists for the future and yet we're often teaching things that are very old. We should be at the leading edge of what's happening in dentistry, not following behind the practicing profession.

One solution to this problem is a committee review of each department. Dr. Donaldson said they do this in the medical school at UBC. It's a peer review of the department which could eliminate, I think, very old things being taught and state-of-the-art material not being taught. I heard of an experience in one school not too long ago where a new faculty member was using a light cured composite. A long time instructor in that school came in, looked at what he was doing and said "what's that"? This was in 1983. The new faculty member said it was a light cured composite resin. The instructor said it would never work and walked away. There are people who are not current in our schools. This does affect our programs and I think curriculum committees can be active in this area.

Where there's a contradiction in views among divisions, the curriculum committee can use that as a lever to effect change. I remember as a student as being particularly frustrated when I was told one thing regarding a technique in one department and something totally different in another department. They never agreed! They kept teaching these contradictory ideas and you had to be sure to keep in mind who you were writing your exam questions for so you would give the right answer for the right instructor. Curriculum committees should deal with such situations.

Another curriculum problem which arises is that the time required to teach something maybe substantial even if that skill is being utilized less frequently than in the past. We used the example of full dentures. Much fewer full dentures are being done in dental offices now than in the past, but it still takes a substantial amount of time to teach the skill and it's still being practised. So how do you get around that? Well, the suggestion was made that you teach, in the required curriculum, the very basics of that technique. You then offer electives to those who want more substantial training in that area and more repetition of the procedures.

This would be apropos for people who knew they were going into practice where they might need these extra skills. I think this is being done to some extent in our faculties now, but certainly not on a well organized basis or from the standpoint of eliminating some facets of our curriculum so that other disciplines can be expanded.

There have been comments about a fifth year being a potential way to obtain more curriculum time. You know, that sounds great at first to an endodontist who doesn't have much time in the curriculum. We could add a fifth year and I could probably get substantially more curriculum time. However, I'm opposed to it, and this is my own view, not our committee's. I think we should clean up our four year curricula before we even think about that fifth year. There's so much in our current curricula that I think could be eliminated, made more concise, or streamlined to make more efficient and effective four-year curricula. We must take our present curricula and say to faculty members "bring us the hard evidence that you need more time and that you're using the time that you have now efficiently". Until we do this, how can we as faculties, on a broader basis, say we need a fifth year when we can't justify what's in our curricula right now.

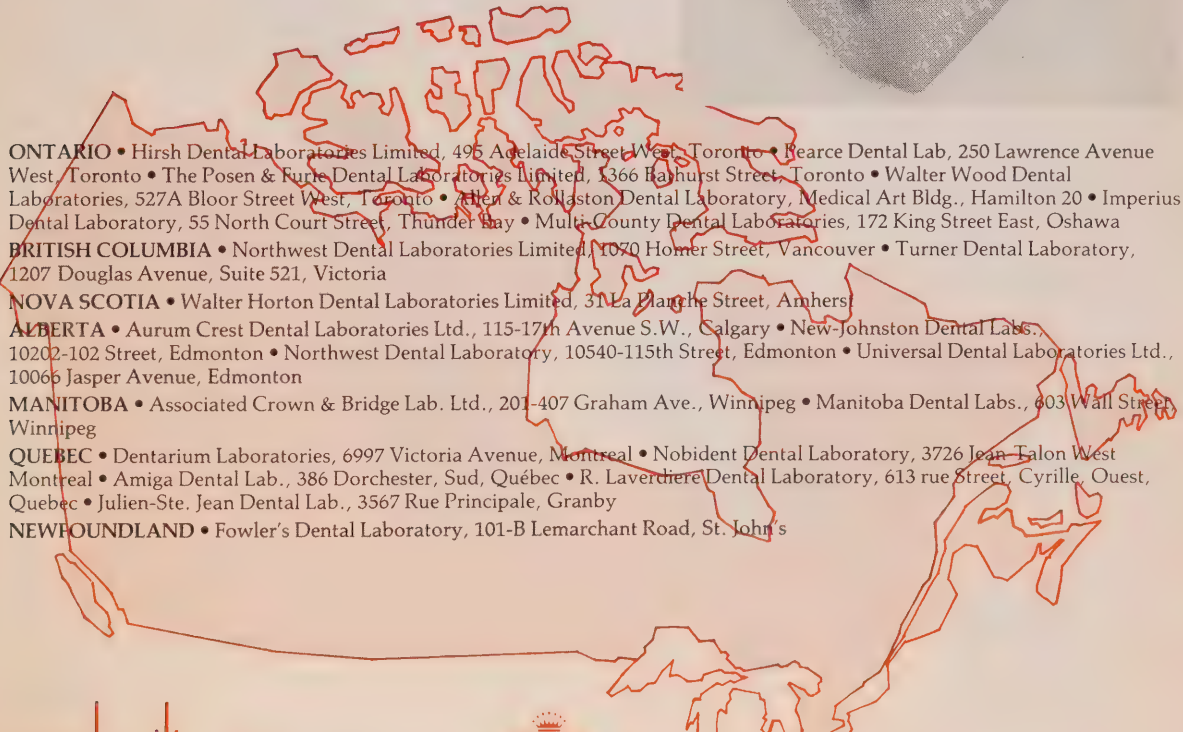
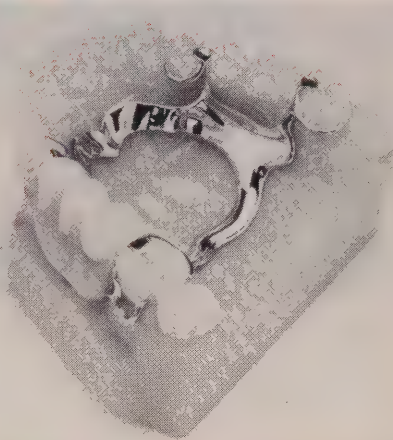
Now, one of my final comments is on the content of perio programs. I can't presume to tell you about what should be in perio programs except that I would like to see more perio-endo interaction. We have operated far too long as independent groups with our own little fiefdoms and I would like to see a lot more combined endo-perio interaction. I've been guilty about staying in my own area too often also, but we really need interaction. We find so often, for example, that when patients are referred to our endodontics clinics for treatment, they come in with gross perio problems nobody's looked at yet, and we have to find the periodontist. One way we could facilitate treatment is to have a combined endo-perio clinic at the undergraduate level where the endodontic clinic sessions coincide with the perio clinic sessions. Strong endo-perio interaction will strengthen our curricula and lower the frustration levels of student, patients and faculty.

My last comment is in reference to Dr. David Singer's comment about elephants which I thought was particularly apropos. Somebody asked a question in our task group regarding the time from presentation of new programs to the time of implementation. In our school, and in Dr. Singer's school, it was about nine months. Fortunately, it is not the same length of time as the gestation period of elephants which is 22 months.

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## A COMPARISON OF BUPIVACAINE TO LIDOCAINE WITH RESPECT TO DURATION IN THE MAXILLA AND MANDIBLE

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Jeffrey S. Kushneriuk, DMD  
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### SUMMARY

*This was a double blind study comparing Marcaine (bupivacaine hydrochloride 0.5 per cent with 1:200,000 epinephrine) to Xylocaine (lidocaine hydrochloride 2 per cent with 1:100,000 epinephrine) for duration of pulpal and soft tissue anesthesia in the maxilla and mandible. Healthy dental students with intact, vital teeth were used as the subjects. Measurements of pulpal and soft tissue anesthesia were registered by electric pulp test and tactile sensation, respectively. Results indicated an equal time of pulpal anesthesia for both agents in the maxilla, but a prolonged duration of pulpal anesthesia for Marcaine in the mandible. Soft tissue anesthesia was longer for Marcaine in both jaws.*

### AVANT-PROPOS

*Au cours d'une étude en double-aveugle, on a comparé Marcaine (0,5 pour cent de chlorhydrate de bupivacaine avec 1:200.000 d'épinéphrine) à Xylocaine (2 pour cent de chlorhydrate de lidocaïne avec 1:100.000 d'épinéphrine) pour vérifier combien longtemps chacun anesthésie les tissus pulpaire et les tissus mous du maxillaire et de la man-*

*dibule. Les sujets choisis étaient des étudiants en médecine dentaire jouissant d'une bonne santé et ayant des dents vivantes. On a mesuré la durée de l'anesthésie de ces deux sortes de tissus avec le test électrique de vitalité pulpaire, puis avec des sensations tactiles. D'après les résultats obtenus, les deux produits anesthésient aussi longtemps l'un que l'autre les tissus pulpaire du maxillaire, mais Marcaine anesthésie plus longtemps ceux de la mandibule. De plus, Marcaine anesthésie plus longtemps les tissus mous des deux mâchoires.*

Local anesthetics are drugs which when injected into oral tissues produce a reversible interruption of peripheral nerve conduction in a localized area of the oral cavity.<sup>1</sup> Their widespread use in dentistry to control pain involves administration via infiltration or regional nerve blocks, and their efficacy and duration of action are dependent on a number of factors, including chemical structure, the presence of vasoconstrictor, the tissue health of the host, volume and concentration used, and proximity of the anesthetic to the nerve(s).

Two local anesthetics that have gained acceptance in the dental field are Xylocaine®

(lidocaine hydrochloride) and Marcaine® (bupivacaine hydrochloride). These agents are both from the amide group of local anesthetics, and for dental applications are considered long acting. Bupivacaine hydrochloride, by virtue of its high lipid solubility and strong protein binding characteristics, is considered more potent and capable of longer anesthetic duration than lidocaine hydrochloride in comparable concentrations.<sup>2</sup> Since its inception in 1957 and introduction to the health profession in 1963, bupivacaine has been used extensively in medical<sup>3,4</sup> and dental<sup>3,5,6</sup> applications. In the dental field, it is useful in complicated and protracted restorative procedures, emergency relief of pain from acute toothache where definitive endodontic treatment cannot be rendered, or post-operatively following traumatic dental procedures.

There are few studies comparing the duration of anesthesia using these two local anesthetics in the maxilla (infiltration) versus the mandible (regional nerve block), and even fewer that have tested pulpal anesthesia with these agents. This paper compares Xylocaine to Marcaine for duration of pulpal and soft tissue anesthesia in both the maxilla and mandible in humans.



TABLE I

Duration of Pulpal Anesthesia  
— Maxilla

| Subject Number                                                 | Marcaine (minutes) | Xylocaine (minutes) |
|----------------------------------------------------------------|--------------------|---------------------|
| 1                                                              | 82                 | 82                  |
| 2                                                              | 60                 | 60                  |
| 3                                                              | 88                 | 88                  |
| 4                                                              | 56                 | 90                  |
| 5                                                              | 83                 | 53                  |
| 6                                                              | 48                 | 78                  |
| 7                                                              | 53                 | 53                  |
| 8                                                              | 30                 | 30                  |
| 9                                                              | 60                 | 60                  |
| Mean                                                           | 62.2               | 66.0                |
| SD                                                             | 18.9               | 19.9                |
| $t = 0.60$                                                     |                    |                     |
| Difference is not statistically significant ( $p \leq 0.05$ ). |                    |                     |

## LITERATURE REVIEW

Feldman and Nordenram<sup>7</sup> have reported the duration of anesthesia in patients receiving 0.25 per cent and 0.5 per cent solutions of Marcaine containing 1:100,000 epinephrine. All 212 patients had surgical extraction of mandibular third molars. Two carpules of anesthetic were administered, partly as a nerve block and partly as infiltration anesthesia in the surgical area. Mean times for the anesthetic to "wear off" as derived from a patient questionnaire was 296 minutes for the 0.25 per cent solution and 319 minutes for the 0.5 per cent solution. These authors noted that Marcaine had a short onset time and that in comparison to Mepivacaine (Carbocaine 2 per cent 1:100,000), the onset of postoperative pain was delayed.

Hallden et al<sup>8</sup> compared Marcaine 0.25 per cent 1:200,000 to Xylocaine 2 per cent 1:80,000 and Carbocaine 3 per cent in 420 patients undergoing surgical extraction of mandibular third molars. Injection of two carpules of anesthetic led to mean duration times of 285 minutes for Marcaine vs. 185 and 152 minutes for Xylocaine and Carbocaine, respectively. They judged the anesthetic effect (rapid onset, decreased need for an additional injection) best for Xylocaine and also reported no reduced need for analgesics with Marcaine during the first 24 hours postoperatively.

The difference in findings from these two studies led to a number of trials, basically testing Marcaine against other anesthetic agents for oral surgical procedures. Three experiments tested Marcaine vs. Lidocaine in oral surgery cases involving procedures in the mandible.<sup>2,9,10</sup> In all three, duration of anesthesia and need for postoperative analgesics was monitored by patient

response to a questionnaire. The results were similar; Marcaine had a prolonged duration of operative anesthesia and postoperative analgesia, and the need for postoperative analgesics was decreased. In two of the papers, the onset time was reported slower with Marcaine and was equal to Lidocaine in the other paper.

Oral surgery procedures utilizing Marcaine in both the maxilla and mandible were reported by Pricco<sup>11</sup> and by Trieger and Gillen.<sup>12</sup> Pricco performed 25 maxillary and 25 mandibular surgical extractions. After injection, soft tissue anesthesia was monitored by pin-prick to the injected area and the contralateral side every 15 minutes. Results showed great variation among individuals and although the first sensation was quicker in the maxilla (mean 249.6 min.), complete return to normal sensation was almost the same for both jaws (maxilla 548.4 min., mandible 531.2 min.). Trieger and Gillen did not differentiate the duration of anesthesia for maxilla vs. mandible but did show that 0.5 per cent Marcaine 1:200,000 lasted an average of 420 minutes, whereas a similar concentration without epinephrine lasted 348 minutes. Again, less postoperative pain was reported when Marcaine was used as compared to Carbocaine 3 per cent.

The perception that Marcaine may have a prolonged and equal duration of anesthesia in the maxilla and mandible was supported by the research of Dunsky and Moore.<sup>13</sup> With Marcaine 0.5 per cent 1:200,000 they found a wide variation in response in their 42 subjects but noted complete recovery for maxillary infiltration was  $512 \pm 399$  minutes, whereas mandibular blocks had a mean of  $497 \pm 173$  minutes.

The use of an electric pulp tester to measure pulpal anesthesia in conjunction with marcaine local anesthesia was first reported by Aberg et al<sup>14</sup> and later by Biel et al.<sup>15</sup> Aberg and his colleagues, when testing healthy lateral incisors, noted pulpal anesthesia was quite brief — 7.5 minutes for 0.5 per cent concentration. Soft tissue anesthesia at 1 per cent concentration averaged 385 minutes. Biel et al<sup>15</sup> recorded pulpal anesthesia of 39.6 minutes in the maxilla vs. 347 minutes in the mandible for Marcaine 0.5 per cent 1:200,000 epinephrine.

## Materials and Methods

Twenty-three dental students (aged 22 to 33 years) gave their informed consent and volunteered to participate in this study. A health history was taken to exclude anyone with a history of allergy or hypersensitivity to amide-type local anesthetics. Exclusion criteria also included: concomitant treatment with medications which may

interfere with local anesthetic activity, hepatic or hormonal disorders, pregnancy, heart dysfunction or pacemaker, infection at the site of injection, or concurrent orthodontic treatment. The teeth to be tested (the second premolar of each quadrant) were caries free, vital and without symptoms.

Cartridges (1.8 ml) of Marcaine (bupivacaine hydrochloride 0.5 per cent with 1:200,000 epinephrine) and Xylocaine (lidocaine hydrochloride 2 per cent with 1:100,000 epinephrine) were coded and covered so that neither the operator nor the student knew which drug was being used. Before the anesthetic was administered, the test teeth were dried and a baseline reading using an analytical technology<sup>®</sup> digital readout pulp tester, was performed. The sweep range was set at approximately the midpoint, toothpaste used as the interface media, and the electrode applied to the buccal midportion of the clinical crown. This pulp tester has a scale 0-80, with 80 indicating a lack of pulpal response to the electric stimulation. Patient response of pain to readings less than 80 indicate pulpal sensation.

Twenty-two dental students received maxillary infiltrations in the alveolar sulcus adjacent to the buccal surface root end of the maxillary second premolars. Each student received one carpule of Marcaine to one side and one carpule of Xylocaine to the contralateral tooth. One operator performed all injections using a 27-gauge needle. The time of injection was registered and is considered time zero. At 30-minute intervals pulpal and soft tissue anesthesia were tested. Pulpal anesthesia was measured by electric pulp test. A reading of 80 was considered to be complete pulpal anesthesia corresponding with no patient response. Patient response before maximal electrical pulpal stimulation (< 80) meant a return of pulpal sensation. Testing for pulpal anesthesia was continued until sensation consistently registered below 80 on the electric pulp tester. The duration of pulpal anesthesia was judged by the time of injection to the first time pulpal sensation was registered by the electric pulp tester and no further readings of 80 appeared.

The experiment on the mandible followed identical protocol, with the exception that an inferior alveolar nerve block was rendered rather than an infiltration, and a 25-gauge needle was utilized.

Student's t-tests (pair samples; unmatched subjects) were used to assess the statistical significance of the results.

## RESULTS

## A. Maxilla

Table I depicts the duration of pulpal anesthesia for the two anesthetics. Twenty-

two students received 44 injections. Only 25 of these infiltrations provoked a significantly deep anesthesia to record 80 (no response) to the EPT. Fourteen of 22 Xylocaine injections registered 80, as compared to 11 of 22 for Marcaine. Nine students had readings of 80 on both sides. The results for these nine, shown in Table I, reveal that pulpal anesthesia was nearly identical for both anesthetics, as six of the nine subjects had a lasting return of pulpal sensation at the same time and the other three were within the next check — 30 minutes.

Soft tissue anesthesia was monitored up to three hours. After three hours, 17 of the 22 students who had Marcaine injections still had soft tissue anesthesia, whereas only four of 22 Xylocaine injections were still in effect.

## B. Mandible

Fifteen subjects received a bimaxillary block with Marcaine on one side and Xylocaine on the other. Five did not achieve pulpal anesthesia of 80 in both quadrants (Xylocaine achieving inadequate anesthesia three times and Marcaine twice). These five students were eliminated from the study. Table II depicts the duration of pulpal and soft tissue anesthesia for the 10 remaining persons. Results indicate a significantly ( $p \leq 0.05$ ) longer duration of pulpal and soft tissue anesthesia with Marcaine.

The length of pulpal anesthesia was longer for both anesthetics in the mandible as compared to the maxilla. Analysis of the results using student's *t*-test for unmatched samples showed that the difference for Marcaine was very highly significant ( $p \leq 0.001$ ). For Xylocaine the difference is highly significant ( $p \leq 0.01$ ).

## DISCUSSION

Most previous studies have investigated anesthetic duration of soft tissue following restorative or surgical procedures.<sup>2,7-13</sup> In addition, the patient monitored the results by a questionnaire.<sup>2,7,9,10,12,13</sup> The present study used healthy patients and teeth, and monitored the results by means of electric pulp tests as well as patient response to tactile stimuli.

This study points to some difficulties and interesting insights concerning the reliability and use of the electric pulp tester. Previous studies have shown the EPT to be safe,<sup>16</sup> but the reliability has been questioned by others.<sup>14,17</sup> Our study showed that a number of subjects did not achieve a pulpal anesthesia deep enough to measure 80 on the analytic pulp tester. In the mandible, this may be explained by the use of only one carpule, the possibility of accessory innervation, or the solution not being

TABLE II

### Duration of Pulpal and Soft Tissue Anesthesia — Mandible

| Subject Number | PULPAL             |                     | SOFT TISSUE        |                     |
|----------------|--------------------|---------------------|--------------------|---------------------|
|                | Marcaine (minutes) | Xylocaine (minutes) | Marcaine (minutes) | Xylocaine (minutes) |
| 1              | 458                | 158                 | 488                | 188                 |
| 2              | 297                | 207                 | 447                | 203                 |
| 3              | 323                | 173                 | 443                | 173                 |
| 4              | 213                | 213                 | 303                | 213                 |
| 5              | 600                | 240                 | 720                | 270                 |
| 6              | 160                | 160                 | 280                | 220                 |
| 7              | 425                | 180                 | 485                | 220                 |
| 8              | 546                | 180                 | 546                | 220                 |
| 9              | 510                | 180                 | 525                | 210                 |
| 10             | 360                | 150                 | 430                | 270                 |
| Mean           | 389.2              | 184.1               | 466.7              | 219.1               |
| SD             | 144.1              | 35.3                | 124.0              | 31.0                |

1. Pulpal anesthesia (Marcaine vs Xylocaine) Mandible  
 $t = 22.67$   
Difference is statistically significant ( $p > 0.05$ ).
2. Soft tissue anesthesia (Marcaine vs Xylocaine) Mandible  
 $t = 3.52$   
Difference is statistically significant ( $p > 0.01$ ).
3. Duration of pulpal and soft tissue anesthesia — Marcaine  
 $t = 1.46$   
Difference is not statistically significant ( $p > 0.05$ ).
4. Duration of pulpal and soft tissue anesthesia — Xylocaine  
 $t = 1.25$   
Difference is not statistically significant ( $p > 0.05$ ).

delivered close enough to the inferior alveolar nerve. The maxilla, however, where infiltration directly above the root apices was used, also had many pulps (19 of 44) that did not achieve a pulpal anesthesia registering 80. Clinically, it was believed unlikely one could "miss" this often and thus it is highly likely that most clinical procedures can be performed painlessly when, in fact, pulpal anesthesia is not at the end point level of this pulp tester.

A further complication presented itself, when it was noted that a few subjects had the maximal reading (80) on the EPT — lost it at the next one or two check times ( $1\frac{1}{2}$  to 1 hour) — only to have it return to 80 at subsequent checks! For this reason, time is recorded as the first pulpal sensation that subsequently did not return to a maximum reading.

Our results concur with others stating that Marcaine has a large variation in individual duration response. Unfortunately, since the maxillary soft tissue testing was concluded after three hours, we were unable to determine whether soft tissue anesthesia had as long a duration in the maxilla as in the mandible as compared with two other studies.<sup>11,13</sup> Utilizing only student questionnaire data, it is our opinion that soft tissue anesthesia is not as prolonged in the maxilla as in the mandible for Marcaine.

## CONCLUSIONS

1. Marcaine and Xylocaine have an almost equal duration of pulpal anesthesia in the maxilla.
2. The duration of pulpal anesthesia is significantly greater for both agents in mandibular blocks vs. maxillary infiltrations.
3. The duration of pulpal anesthesia in the mandible is significantly greater for Marcaine than Xylocaine.
4. The duration of soft tissue anesthesia in the mandible is significantly greater for Marcaine than Xylocaine.
5. Tests of pulpal anesthesia using an electric pulp tester may not have "clinical significance".
6. The application of local anesthetic agents for "long-term" relief of pain in patients with pulpal symptoms will be more successful in the mandible than the maxilla. Marcaine rather than Xylocaine would be the agent of choice in the mandible.

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The author acknowledges with appreciation Dr. J.J. Tynan's support with statistical analyses in the preparation of this paper.

Reprint requests to Dr. Teplitsky.



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## OBITUARIES/NÉCROLOGIES

**DENT, R.J.:** A Life Member of the Canadian Dental Association, Dr. Dent was born in Vernon, B.C. in 1919. He was a graduate of North Pacific College in 1943 and practiced dentistry in Vancouver until his retirement in 1984.

**FINDLAY, J.:** A graduate of the University of Toronto in 1960, Dr. Findlay was born in 1926. He was a Fellow of the Royal College of Dentists of Canada and practiced in Halifax, Nova Scotia.

**HING, J.T.:** Born in 1927, Dr. Hing was a graduate of McGill University in 1955. He was a resident of Toronto, Ontario at the time of his death.

**LUNDAHL, C.B.:** A Life Member of the Canadian Dental Association, Dr. Lundahl was born in 1909. He was a graduate of the Portland Dental College in 1932, and served in the Royal Canadian Dental Corps during World War Two. He practiced dentistry in Vancouver until his retirement.

**MCDONALD, J.E.:** A graduate of Dalhousie University in Halifax in 1950, Dr. McDonald maintained a practice in Victoria, British Columbia until his death recently.

**NG, E. C-K.:** A resident of Kowloon, Hong Kong at the time of his death, Dr. Ng was a graduate of the University of Western Ontario in 1976 and was licensed to practice dentistry in the province of Ontario.

**PANAR, M.:** A Life Member of the Canadian Dental Association, Dr. Panar was a graduate of the University of Minnesota in 1938. He was born in Saskatoon, Saskatchewan in 1915 and practiced in New Westminster and Vancouver, B.C. for many years.

**POPOVE, P.A.:** A graduate of the University of Alberta in 1964, Dr. Popove was born in Canora, Saskatchewan in 1936. He practiced in Coquitlam, B.C. until his death.

**RENAUD, O.:** Né en 1933 et diplômé de l'Université de Montréal en 1959, le Dr. Renaud habitait à Ste-Foy (Québec) au moment de son décès.

**SABLE, S.E.:** A graduate of the University of Toronto in 1953, Dr. Sable was born in 1929. He was a resident of Downsview, Ontario at the time of his death.

**SHWALUK, S.:** A graduate of the University of Toronto in 1971, Dr. Shwaluk was a resident of Mount Hope, Ontario at the time of his death.

## SCIENTIFIC CORRECTION

In the April 1987 issue of the Journal (Vol. 53, No. 4, 1987) two Figures in the scientific article entitled "Chronic



Figure 2: Lacrymal probe pointing to cutaneous fistula

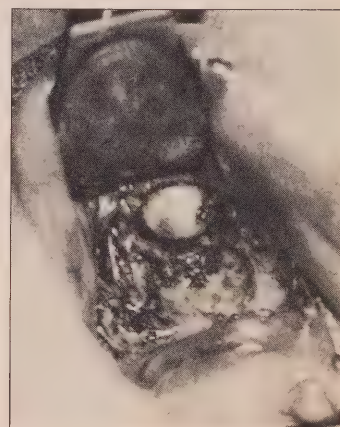


Figure 3: Nasolabial cyst in situ

Nasolabial Cyst" by Dr. David Precious, were reversed. The correct photographs in the correct sequence, are shown below.

# ACUPUNCTURE

## ANALGESIA FOR POSTOPERATIVE DENTAL PAIN

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Jenepher J. Hemsted  
Kingston, Ont.

### ABSTRACT

*Acupuncture has been used as an alternative form of pain control in the treatment of dental pain with regard to (1) the modulation of nociceptive input during operative dentistry, and (2) the treatment of benign pain of the orofacial origin. Its potential as an effective analgesic for acute postoperative dental pain has also been suggested by some dental practitioners. The aim of the present study was to investigate the effect of high intensity electro-acupuncture stimulation on postoperative recovery following the removal of the third molar. We were unable to observe different patterns of pain reports or self-administered analgesic medication intake between patients who received electroacupuncture and those who received traditional therapy.*

### SOMMAIRE

*Dans le traitement des douleurs dentaires, on a utilisé l'acupuncture comme autre moyen de les réduire en ce qui concerne (1) la modulation du réflexe nociceptif durant les procédures chirurgicales et (2) le traitement des douleurs bénignes d'origine bucco-faciale. Certains praticiens dentaires ont également suggéré que l'acupuncture peut être un analgésique efficace pour les douleurs dentaires aiguës post-opératoires. Cette étude a pour but de vérifier les effets de la stimulation à l'aide de l'électro-acupuncture à haute intensité lorsqu'on éveille les patients après leur avoir extrait la troisième molaire. Entre les patients qui ont reçu l'électro-acupuncture et ceux qui ont reçu des soins traditionnels, on n'a pu constater aucune différence dans les douleurs qu'ils ressentait ou dans la quantité d'analgésiques qu'ils prenaient eux-mêmes.*

In an effort to utilize new forms of pain control modalities for operative and surgical dental procedures, dentistry has started to inves-

tigate acupuncture as an alternative to traditional pain control techniques.<sup>1-5</sup> Although successful use of acupuncture to produce analgesia has been reported in dentistry,<sup>5</sup> adequate physiological and neurological explanations of these reports are still outstanding.<sup>6</sup> However, two distinct features have been clearly demonstrated: firstly, acupuncture points which are distant from the area of pain produce pain reduction when stimulated;<sup>7,8</sup> and secondly, high intensity electrical stimulation of acupuncture points induces lasting periods of pain analgesia.<sup>9,10</sup>

Although acupuncture is unlikely to replace injectable local anesthesia for operative or surgical pain, its potential as a powerful analgesic in dental practice has been emphasized by the majority of clinical investigators. The pain-controlling properties of acupuncture have been considered in two areas of dentistry: 1) in the modulation of nociceptive input during operative procedures,<sup>1,3-5</sup> and 2) in the treatment of chronic benign pain of orofacial origin.<sup>11</sup> In addition, acupuncture has been suggested as an effective analgesic for acute postoperative pain.<sup>1,12</sup>

In order to investigate the latter claim, we studied the effect of acupuncture treatment on postoperative recovery after the removal of the third molar — utilizing high intensity electro-acupuncture stimulation at appropriate dental acupuncture points — and compared the results with those obtained following traditional therapy.

### METHOD

#### Patient Selection

The study sample consisted of 18 patients (4 males, 14 females), ranging in age from 16 to 48 years (mean 28.2, sd 8.4), who were referred to our dental clinic for the surgical removal of one or more third molars. To be included in this investigation, the patients had to meet the following criteria:

- 1) good health with no ongoing medical problems and taking no medication;
- 2) no allergies to narcotic analgesics; and
- 3) no third molars which were totally impacted in bone. Patients in whom all of the third molars were fully erupted were also excluded from this study.

#### Pain Assessment

A Daily Pain Diary was used, which was modeled after the one described by Budzynski et al.<sup>13</sup> The diary collects self-reports on pain intensity and on medication consumed for relief of pain. The patients were instructed to record four times a day (morning, noon, evening, bedtime) their pain intensity (from 0 — no pain, to 5 — intense incapacitating pain) and the amount and type of medication consumed. The diary was kept during a 5-day pre-operative period and for 10 days thereafter. Pain scores were based on the average daily pain ratings. The interpretation of the analgesic medication consumed was based on the number of tablets ingested per day. This method has been found to provide a reliable estimate of the amount of medication required to obtain or maintain comfort.<sup>14</sup>

#### Acupuncture Treatment

Patients were assigned at random to one of two treatment conditions (nine in each group). The patients in the acupuncture group were provided with the following explanation: "If you have acupuncture during surgery, it is our impression that it minimizes postoperative complications such as pain and swelling." If, for any reason, a patient was not interested in receiving acupuncture, he or she was not included in the study. For those in the control group, who were not offered electro-acupuncture, a conservative sedation technique was utilized (nitrous oxide/oxygen-meperidine IM). This particular sedation therapy was chosen because the recovery period after nitrous oxide inhalation is relatively brief.<sup>15</sup>



and the half-life of meperidine is only 3.6 hours.<sup>16</sup> Thus, it can be assumed that there were no lasting postoperative analgesic effects from these substances.

The acupuncture points were selected according to instructions of the Shanghai College of Traditional Medicine.<sup>17</sup> The HOKU point was used for the control of post-surgical dental pain.<sup>1,3-5</sup> In addition, SPLEEN 6 was used to enhance relaxation during the procedure. Sterilized stainless steel 32-gauge acupuncture needles were inserted bilaterally<sup>1,3,4</sup> at these points. High intensity electrical stimulation was carried out at a frequency of 0.6 Hz with a maximum intensity tolerable to the patient. Initial intensity of approximately 40uA (micro-ampere) was increased as accommodation took place. Electroacupuncture was continued throughout the surgery and for 15 minutes thereafter.

## SURGICAL PROCEDURE

Anesthesia was obtained for each of the surgical sites, using 2 per cent mepivacaine HCl with 1:20,000 levonordefrin. Individual circumstances directed appropriate surgical protocols. Bone removal and tooth sectioning were completed using high speed, water-cooled instrumentation. Hand instrumentation was utilized to extract teeth and tooth fragments and to perform curettage. Surgical sites were sutured with 000 silk. In all cases, patients were provided with a seven-day postoperative course of penicillin V, 300 mg or erythromycin, 250 mg as a prophylactic measure against infection; Tylenol 3 was prescribed for all patients, to be used at their discretion in the control of postoperative pain.

## RESULTS

A mixed analysis of variance<sup>18</sup> was carried out (between: treatment groups; within: postoperative assessments). In contrast to our expectations, no statistically significant differences were observed between the two groups for pain intensity ( $F(1,16) = 0.55$ , n.s.) and for medication consumption ( $F(1,16) = 1.63$ , n.s.). In fact, the  $F$ -ratio of  $< 1$  for pain intensity may be seen as support for the Null-Hypothesis<sup>18</sup> that both groups experienced comparable intensities of postoperative pain. Furthermore, the analysis failed to detect any interaction group by time effects (pain intensity:  $F(9,144) = 1.08$ , n.s.; medication consumption: ( $F(9,144) = 1.00$  n.s.) As one would expect, however, significant reductions in pain ( $F(9,144) = 14.41$ ,  $p < .001$ ) and medication consumption ( $F(9,144) = 18.94$ ,  $p < .001$ ) were observed over the 10-day period.

## DISCUSSION

The literature indicates that the controversy surrounding acupuncture in dentistry does not question the paucity of high success rates but reflects disagreement regarding the underlying mechanisms of analgesic effectiveness. Taub et al<sup>3,4</sup> suggest that placebo and/or psychological factors may be largely responsible for the observed analgesia in operative dentistry. In contrast, Chapman et al<sup>2</sup> and Zaretsky et al<sup>1</sup> argue that psychological factors are only minimally involved in obtaining analgesia and that the observed effects are reliably based and are dependent on the stimulation of particular anatomical loci.

In contrast to these investigations, which focused on nociceptive experiences during operative dentistry, we followed-up on the clinical observation that acupuncture might be useful in the treatment/prevention of acute postoperative pain.<sup>1</sup> Using well-documented techniques of electrical acupuncture, we failed to observe, however, any differences in pain ratings and in medication consumption between patients receiving acupuncture and those given traditional therapy. However, somewhat to our surprise, we noted that those patients who had received acupuncture expressed enthusiasm about their experiences and referred friends and relatives to our clinic for treatment. This would suggest beneficial aspects of acupuncture not accounted for in our collected data. Thus it is our impression that, although acupuncture is of little value in reducing postoperative dental pain or the amount of medication consumed for relief of pain, the prospect of receiving acupuncture treatment may be of motivational value, enhancing the patient's willingness to expose himself or herself to dental surgery. These conclusions would lend support to Taub and colleagues<sup>3,4</sup> formulation that acupuncture is only of motivational value in dentistry.

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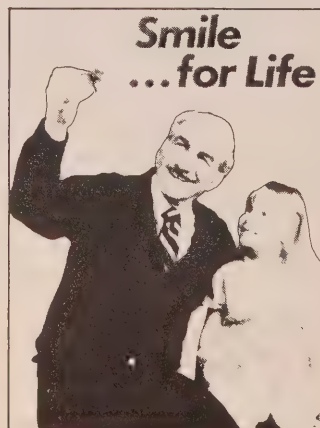
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## ANALYSIS OF COMPRESSION PLATING OF MANDIBULAR FRACTURES

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### ABSTRACT

*There are many ways of treating mandibular fractures. In the past, immobilization of the mandible traditionally involved some form of intermaxillary fixation or external pin fixation. With newer compression plating techniques, the period of intermaxillary fixation can be greatly reduced or even omitted. The patient benefits from better oral hygiene, an unobstructed airway and freedom to masticate food. The effectiveness of this form of therapy was evaluated in 72 patients with a total of 86 mandibular fracture sites, 16 of whom were treated without any post-operative intermaxillary fixation. The average period of intermaxillary fixation was shortened from the usual 6 to 7 weeks needed with other methods of treatment to an average of 1.6 weeks using compression plating. General dental practitioners should be aware of this treatment modality and of the radiographic appearance of bone plates, as this technique is being utilized at certain centres in Canada. This paper serves to familiarize the dentist with some of the important facets of this procedure.*

### SOMMAIRE

*Ily a plusieurs façons de traiter les fractures de la mandibule. Dans le passé, l'immobilisation de la mandibule demandait ordinairement un genre de fixateur intermaxillaire ou de brochage externe. Avec les toutes nouvelles techniques de doublage par compression, on peut réduire considérablement le temps où l'on utilise un fixateur intermaxillaire ou même le supprimer tout à fait. Le*

*patient jouit ainsi d'une meilleure hygiène buccale, respire mieux et peut mastiquer librement ses aliments. On a vérifié l'efficacité de cette thérapie chez 72 patients qui présentaient en tout 86 fractures de la mandibule dont 16 ont été traitées sans l'aide de fixateur intermaxillaire après l'opération. Alors qu'avec les méthodes traditionnelles, le fixateur intermaxillaire doit ordinairement rester en place de six à sept semaines, on a pu, avec le doublage par compression, réduire cette période à une moyenne de 1,6 semaine. Les praticiens dentaires généraux devraient connaître ce mode de traitement et savoir reconnaître sur les radiographies les plaques utilisées pour consolider les os, puisque certains centres au Canada utilisent maintenant cette technique. Cet article a pour but de familiariser le dentiste avec certains points importants de la procédure.*

The mandible is the second most frequently fractured facial bone after the nasal bones.<sup>1</sup> Disruption of the facial skeleton, particularly the fractured mandible, can complicate management of the multiple trauma patient. For example, an unstable mandible can lead to upper airway obstruction. As well as being acutely painful, the sequelae of mandibular fractures may include a malunion, an unsightly facial deformity, a marked malocclusion, temporomandibular joint dysfunction, an incomplete bony union and osteomyelitis.

There are several ways to treat mandibular fractures.<sup>2</sup> Some alveolar fractures may respond to reduction and fixation, if, for example, arch bars alone are used. Those disrupting the continuity of the mandible

may be amenable to closed reduction and immobilization, using arch bars with intermaxillary fixation to wire the jaws closed. In edentulous mouths, Gunnings splints or modified dentures may be wired into position before intermaxillary fixation is applied. This is usually a most uncomfortable method of treatment. In other centres, cast capped splints are cemented to the existing dentition and then the jaws are wired together.

All of the above procedures can be combined with open reduction and intraosseous wire fixation of the fragments — a method that has stood the test of time. This type of reduction does not impart sufficient rigidity to the fracture to allow early release from intermaxillary fixation. It serves merely to re-approximate displaced and anatomically misaligned fragments.

External pin fixation can achieve satisfactory reduction of certain fractures without the use of intermaxillary fixation. However, these pins impose a hardship on the patient, who then requires special nursing care. They are also hazardous when used with non-compliant patients.

Bone plates have a number of uses in oral and maxillofacial surgery, including the management of certain mandibular, maxillary and zygomatic fractures. They can be used in orthognathic surgery and in the stabilization of bone grafts during reconstructive procedures. They may also serve as space maintainers of defects left by ablative tumour surgery or as a result of gunshot wounds.

Five general types of plates have been used in oral and maxillofacial surgery: titanium mesh used in reconstructive sur-



gery,<sup>3</sup> the mandibular staple bone plate used in preprosthetic surgery,<sup>4</sup> metacarpal plates adapted from hand surgery, compression plates developed by the Association for the Study of Internal Fixation (ASIF)<sup>5,6</sup> and the newer monocortical miniplates.<sup>7,8</sup> The latter three have been used in the treatment of mandibular fractures.

Compression plating can be used for mandibular fractures whenever early mobilization of the mandible is required and when the fracture is not excessively comminuted. The objective of this procedure is the immediate, active pain-free mobilization of the mandible without jeopardizing the heal-

ing process.<sup>9</sup> Accurate anatomical reduction at the osseous margins and the occlusal plane and absolute stabilization of the fragments help to achieve this result. The mechanics of bicortical compression plating of the mandible have been well documented<sup>10,11</sup> and are beyond the scope of this paper.

Compression plating imparts a high degree of three-dimensional stability to the reduced fracture. In the mandible, this allows early mobilization by obviating the need for long-term intermaxillary fixation and gives better access to the airway, perhaps avoiding tracheostomy in the patient with multiple

facial bone fractures. Without intermaxillary fixation, pulmonary care is simplified in the multiple trauma patient and feeding is made much easier. All these advantages apply not only to the multiple trauma patient but also to the patient with an uncertain neurological status, the medically or surgically compromised patient and those afflicted with severe mental retardation, in whom intermaxillary fixation is not well tolerated.

Early release from intermaxillary fixation leaves the dentition more accessible to cleaning. The occlusal and lingual surfaces of the teeth can now be reached with a toothbrush, resulting in better oral hygiene and leaving the dentition in a better condition after treatment. With intermaxillary fixation the teeth are wired together and only the buccal surfaces can be cleaned, often for 6-7 weeks. Early mobilization of the mandible may be a valuable adjunct to the treatment of fractures involving the mandibular condyles.

The smallest ASIF-type plates available in oral surgery are the 2.0 mm bone plates, with varying configurations and number of holes, as dictated by the morphology of the fractures. The bulkier ASIF 2.7 mm plates can also be used; these apply a greater degree of compression. We have used compression plates in a variety of locations in the mandible, including the ramus, angle, body and parasymphiseal regions. All these fractures can be treated using an extraoral submandibular approach as described by Risdon,<sup>12</sup> by a submental incision or through existing lacerations. These incisions give good access to most fractures but can leave an extraoral scar and may result in postoperative paresis of the marginal mandibular branch of the facial nerve.<sup>13</sup> To obviate these complications, we have adapted our instrumentation towards using an intraoral approach.

For fractures in the parasymphiseal and body regions of the mandible a translabial approach is advantageous. Traction is placed on the lower lip when it is pulled forward by an assistant. The mucosa of the vestibular aspect of the lower lip is incised, approximately 1 cm from the vermillion border, on either side of the midline as dictated by the location of the fracture. The labial minor salivary glands will be seen to protrude through the incision. The mental nerves can easily be identified and dissection is carried towards the parasymphysis, in a plane just superficial to the mental nerves (Fig. 1). At this point, the periosteum is identified, incised and reflected inferiorly, degloving the chin and exposing the mental foramen. The fracture is located and reduced. A suitable bone plate is selected, adapted and fixated to the man-

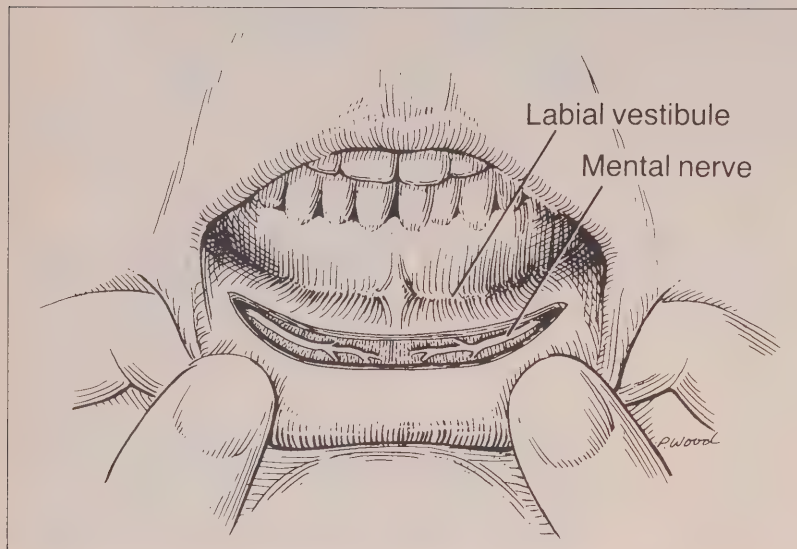


Fig. 1. Diagram of the translabial approach to the parasymphiseal region of the mandible. Note the position of the mental nerves in the wound.



Fig. 2. Compression bone plate in position, as viewed through the translabial approach. The mental nerve is above the bone plate.



dible with appropriate screws, and compression is applied. Fractures involving the mental nerve region can be easily accommodated by placing the bone plate along the inferior border of the mandible, avoiding the nerve and tooth roots (Fig. 2). During closure of this wound, sutures are placed to reapproximate muscle and mucosa. The postoperative radiographic appearance of a bone plate placed through the translabial approach is shown in Fig. 3.

The translabial approach allows good access to the anterior region of the mandible. There is insignificant intraoral scarring with this approach compared to that from an incision placed in the depth of the labial vestibule. In the posterior region of the body of the mandible or of the angle, a vestibular incision is required and the screws must be inserted through tiny percutaneous "stab" incisions.

## MATERIALS AND METHOD

A retrospective study was undertaken to evaluate the results of bicortical compression plating of mandibular fractures. A total of 72 patients, solely with mandibular fractures, were treated in this manner during the period 1980 to 1982. Records, including patients' charts, radiographs of the initial presentation, operative procedure and follow-up were reviewed. Particular note was made of the types and locations of fractures, the approaches to apply internal fixation, length of time spent in intermaxillary fixation, the extent of pre- and postoperative mental nerve paraesthesia and pre- and postoperative paresis of the marginal mandibular branch of the facial nerve.

## RESULTS

The 72 patients had a total of 86 mandibular fracture sites, which were treated with bicortical compression plating. The sites treated were located in the parasymphysis, body, angle and ramus of the mandible. There were 59 sites which were compounded intraorally. None of the fractures were comminuted and 14 patients had bilateral fractures. Fifty-eight extraoral and 28 intraoral approaches were used.

The length of time spent in intermaxillary fixation was reduced from the usual 6-7 weeks to an average of 1.6 weeks with wire or elastic fixation. In fact, 16 patients were treated without any postoperative intermaxillary fixation.

Paraesthesia involving the distribution of the mental nerve in the lower lip was the most commonly seen complication, and was observed in 46 per cent of patients before reduction of their fractures. Postoperatively, there was only a slight increase in para-

esthesia, as 48 per cent of the patients reported sensory deficits in the lower lips.

Weakness of the ramus mandibularis or marginal mandibular branch of the facial nerve after any surgical procedure in the submandibular region is always possible. One patient with a concomitant parotid laceration was noted to have weakness of his ramus mandibularis pre-operatively. In addition, two patients had postoperative facial nerve weakness that was resolved within six months.

All patients received prophylactic antibiotic coverage. In general, for fractures compounded intraorally, prophylactic intra-

venous penicillin was given unless systemic contraindications existed. Those compounded extraorally were given intravenous cephalosporin.

Eight patients (9 per cent), developed postoperative infections that required extended antibiotic treatment. All these fractures were compounded intraorally. In two cases, intraoral sinus tracts developed and it was necessary to remove the bone plates. In only one case did a non-union result.

It has been our policy not to extract teeth in the line of the fracture unless they were also fractured through the roots or pre-

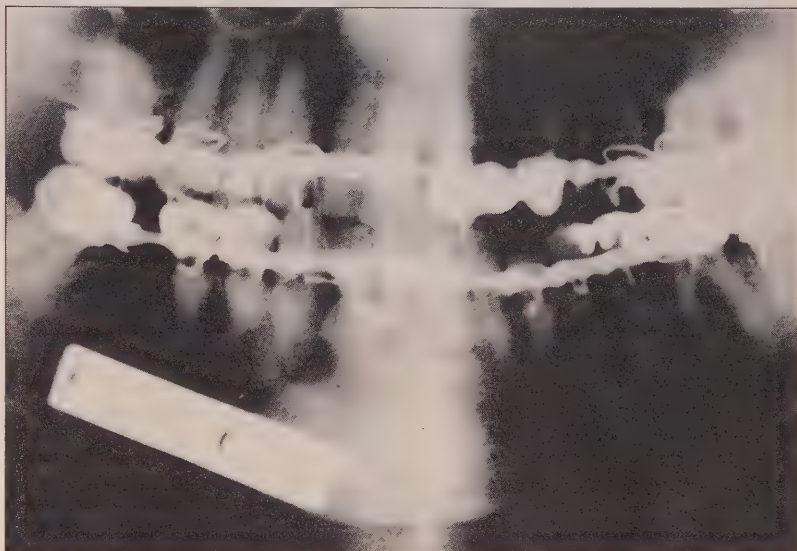


Fig. 3. Postoperative appearance of a 2.7 mm ASIF compression plate used to treat a fracture of the body of the mandible. The bone plate appears as a radiopaque bar.



Fig. 4. Monocortical miniplates, as viewed through the translabial incision.



sented an obvious risk to the healing of the fracture.<sup>14</sup> These risks included extensive carious breakdown or significantly advanced periodontal bone loss. With this proviso, only three teeth in the line of fracture needed to be extracted postoperatively because of periodontal infections.

Early mobilization of the fractured mandible was the key benefit of this procedure. In 66 cases, the occlusion was satisfactory on release from intermaxillary fixation. Six patients required active elastic occlusal therapy after the release of fixation and two needed adjustment of the dentition by occlusal grinding, because of occlusal interferences.

## DISCUSSION

The treatment of mandibular fractures by compression plating achieves its purpose and has the added advantage of early jaw mobilization. This can be helpful in the management of the surgically, medically or neurologically compromised patient. Better control over the airway is possible if intermaxillary fixation is eliminated as soon as possible. Early mobilization in the adjunctive management of fractured mandibular condyles is also possible. Feeding is made easier and oral hygiene is improved.

The incidence of infection with compression plating of the mandible is surprisingly low.<sup>15</sup> Bone plates are implanted into contaminated wounds, especially in the case of fractures compounded intraorally. These foreign bodies seem to be well tolerated because of the abundant blood supply to the tissues of the head and neck. If these same wounds were located on the extremities, pri-

mary closure would be delayed, whereas wounds in the head and neck are treated with primary closure.

Mental nerve paraesthesia was mainly a result of the injury causing the fractures, as the incidence of post-reduction paraesthesia was only slightly higher than that of pre-operative paraesthesia. Paresis of the facial nerve and extraoral scarring are avoided if an intraoral approach is chosen.

Although the occlusion was satisfactory on release of fixation in the majority of cases, close monitoring of the patient's occlusion postoperatively is most important so that interceptive measures can be taken if necessary.

More recently, Champy and Lodde<sup>8</sup> along with others,<sup>7</sup> have described the use of smaller monocortical non-compression bone plates that are easier to adapt to the curved contour of the mandible (Fig. 4). Unlike bicortical compression plates, the screws of the monocortical bone plates need to engage only the outer cortex of the mandible. This, at least theoretically, means that there is a reduced endodontic and periodontal risk to the roots of the mandibular teeth, which can be engaged by inappropriately placed screws. Bicortical compression plates engage both buccal and lingual cortices of bone and may be perceived by some individuals to be more likely to damage tooth roots. As with bicortical compression plates, dentists should be familiar with the radiographic appearance of monocortical plates, as they may be seen on routine radiographs taken in the dental office years after treatment (Fig. 5).

With advances in instrumentation and

new surgical approaches, operative time has been shortened. We believe these results and developments to be of importance in the treatment of mandibular fractures.

**Dr. S ndor** was formerly Chief Resident and Visiting Lecturer, Department of Oral and Maxillofacial Surgery, University of Washington, Seattle, Washington.

**Dr. Collins** was formerly Associate Professor, Department of Oral and Maxillofacial Surgery, University of Washington; and former Chief of Oral and Maxillofacial Surgery, Harborview Medical Center, Seattle, Washington.

Reprint requests to **Dr. S ndor**, Comprehensive Surgical Intern, Toronto General Hospital, 200 Elizabeth St., Toronto, Ont. M5G 2C4.

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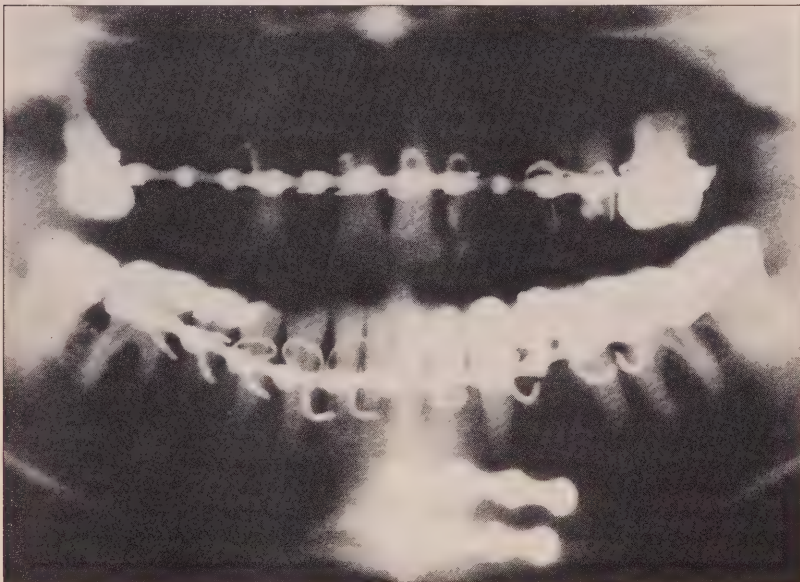
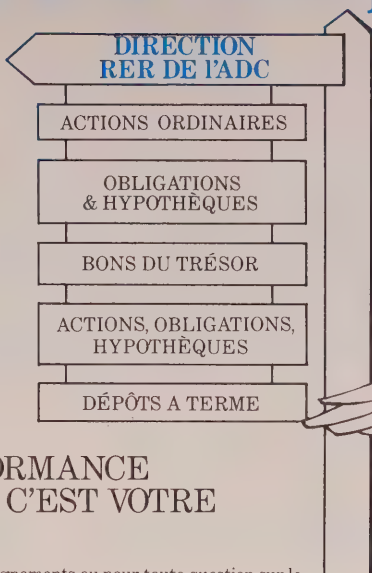


Fig. 5. Postoperative radiographic appearance of monocortical Champy miniplates. Note the scalloped radiopaque pattern of these bone plates.

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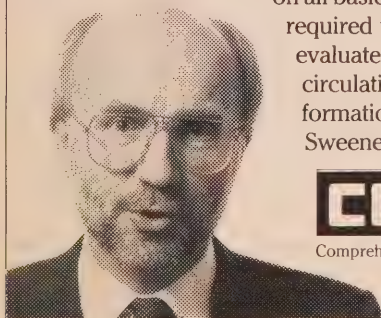
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Dr. L.A. Richardson, Acting Head, Department of Rehabilitative Dental Science, Faculty of Dentistry, University of Manitoba, 780 Bannatyne Avenue, Winnipeg, Manitoba, R3E 0W3, (204) 788-6664.

Appointments will commence August 1, 1987 or as soon as possible thereafter. Review of applications from all sources will begin June 1, 1987 and will continue until positions are filled.



# Announcements

## JUNE/JUIN

**June 6: Intermediate/Advanced Workshop in Clinical Hypnosis**, sponsored by the San Francisco Academy of Hypnosis, Letterman Army Medical Center, San Francisco. Fee: \$100 CE Credit: 7 Units of Category 1 CME credit. Contact: Jan Brooks, 615-27th Street, San Francisco, CA 94131 or (415) 826-0533.

**June 6: Practice Management Seminar** presented by North America's foremost speaker, Dr. Philip Whitener, L'Hôtel, Toronto. Marketing and production, The Systems and Reward of Team-Oriented Dentistry. Contact: The Pride Institute of Management Canada Inc., 4554 Woodgreen Drive, West Vancouver, B.C. V7S 2V2, (604) 925-3453.

**June 7-11: 11th Congress, International Association of Dentistry for Children**, Toronto, Ont. Contact: Secretariat, 11th Congress, IADC, Dept. of Pedodontics, Faculty of Dentistry, University of Toronto, 124 Edward St. Toronto, Ont. M5G 1G6.

**June 11-13: Saskatchewan College of Dental Surgeons annual meeting and convention**, North Battleford, Saskatchewan. Contact: Dr. Glenn Acaster, P.O. Box 503, North Battleford, Saskatchewan, S9A 2Y4, 1-306-445-3422.

**June 11-14: 5th International Congress and 22nd annual Session of the Stomatological Society of Greece**, Hilton Hotel, Athens, Greece. Table Clinics and Video projections included in the programme. Contact: Stomatological Society of Greece, 17 Kallirroes Street, Athens, 117 43 Greece.

**June 12-13: Bio-Research TMJ Seminar**, St. Louis, Missouri. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**June 17-21: 62nd Annual Congress of the European Orthodontic Society**, Madrid, Spain. Contact: Escuela de Estomatologia, Ciudad Universitaria, Madrid, Spain.

**June 18-20: Annual Florida National Dental Congress**, Marriott's Orlando World Center, Orlando, Florida. Contact: Cheryl Marks, (813) 877-7597.

**June 18-21: University of British Columbia and the College of Dental Surgeons of B.C. 25 Year Celebration and Convention**. Featured speaker: Dr. P.O. Branemark. Contact: The College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, B.C., V6H 3N4. 604-736-3621.

**June 18-22: Asian Implant Academy's 4th International Meeting on Oral Implantology**, Singapore. Contact: Organising Chairman, 4th I.M.O.I., 268 Orchard Road, 5th Floor, Yen San Building, SINGAPORE, 0923.

**June 19-21: 6th International Symposium on Ceramics**, sponsored by Quintessence Publishing Co. Inc. Los Angeles Airport Hilton and Towers, Los Angeles, California. Contact: Quintessence Publishing Co. Inc. 870 Oak Creek Drive, Lombard, Illinois, 60148-6405 or 800-621-0387.

**June 22-24: International Conference on Oral Biology**, Amsterdam, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111 14th Street NW, Suite 100, Washington, DC 20005.

**June 23-26: 93rd Annual meeting of the American Dental Society of Europe**, Hotel Royal Victoris-Jungfrau, Interlaken, Switzerland. Contact: Clive R. Debenham, 1 Harley Street, London, WIN 1DA, England.

**June 23-26: Canadian Long Term Care Association National Conference & Annual Meeting**, Holiday Inn, St. John's, Newfoundland. Contact: Evelyn Neil-House (Newfoundland Hospital and Nursing Home Association) (709) 364-7701 or Alison Bowick (CLS) (613) 237-9837.

**June 26-28: International Association for Dental Research**, the Hague, the Netherlands. Contact: Ms. Eloise Ullman, administrative assistant, IADR, 111, 14th Street NW, Suite 100, Washington, DC 20005.

**June 26-July 3: Bermuda Dental Association Convention**, Hamilton, Bermuda. There will be speakers on the topics of Restorative Dentistry, Periodontics and stress management and also an excellent social program. Families welcome. Contact: Dr. Bob Brandon, 85 Lonsdale Drive, London, Canada, N6G 1T4.

**June 28-July 1: Pacific Dental Conference** sponsored by the Pacific Dental Federation and the Alberta Dental Association, Banff Springs Hotel, Banff, Alberta. Featured speakers: Dr. David Garber and Dr. Marwan Abou-Rass. Contact: Dr. N. Zaharichuk, 401-4600 Crowchild Trail N.W., Calgary, Alberta, Canada, T3A 2L6 (403) 286-2600. C.P. Air - Official convention airline. Contact 1-800-268-4704 for special fares.

**June 30–July 4: 8th Congress of the International Association of Dentistry for the Handicapped**, Bergen, Norway. Contact: Dr. Marit Molland, Hjelms 19, N-5032 Minde, Norway.

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## JULY/JUILLET

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**July 1: Applications are being accepted for the Postdoctoral Program Dental Diagnostic Science** at the University of Texas Health Science Center, at San Antonio, for the class beginning July 1, 1987. Contact: Office of the Associate Dean for Advanced Education, The Dental School, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Dr., San Antonio, Texas, 78284.

**July 2-9: College of Dental Medicine of the Medical University of South Carolina's Annual 4th of July Hilton Head Series**, Hyatt on Hilton Head Island at Palmetto Dunes, South Carolina. Courses are Maximizing the Esthetic Potential of Fixed Restorations, The Dental Consultant Looks at Malpractice, The Medically Compromised Dental Patient – Evaluation and Treatment and Dynamic Practice Management – Course I. Contact: Dr. Gordon B. Stine, (803) 792-2144.

**July 3-5: British Dental Association Annual Conference**, Scottish Exhibition and Conference Centre in Glasgow, Scotland. Scientific and Social programmes; speakers include Dr. Richard J. Simonsen, Dr. Michael A. Lennon, Professor Bo Krasse and Professor Jens Pindborg. Special rates for accommodation will be offered. Contact: Helen Mackay, Meeting Planner, 64 Wimpole Street, London, England, W1M 8AL.

**July 4-8: Canadian Paediatric Society and l'Association des Pédiatres de la Langue Française conjoint meeting**, The Queen Elizabeth Hotel, Montréal, Canada. Contact: Secretariat: Canadian Paediatric Society, Children's Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario, K1H 8L1, telephone: (613) 737-2728.

**July 6-8: 1st World Congress on Oral Prevention**, Palais des Congrès, Paris. Topics include tooth disease, dental plaque and prevention of oral diseases. Deadline for registration, April 30. Contact: Dixit International, 73, rue de l'Évangile, 75886 Paris cedex 18, France.

**July 10-11: Bio-Research TMJ Seminar**, Toronto, Canada. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

**July 15, Hilo, July 16, Oahu: Orthodontic Treatment: Reducing Mystique and Improving Prognosis**, sponsored by the Hawaiian Dental Association. Contact the Continuing Education Committee of the Association at: 100 Bishop St. Suite 805, Honolulu, Hawaii, 96813.

**July 17-22: Academy of General Dentistry's 35th Annual Meeting**, Seattle, Washington. The theme is "The Changing shape of Dentistry" and includes a scientific session co-sponsored by the Academy of Dentistry for the Handicapped. Contact: AGD's meeting Dept., 211 E. Chicago Avenue, Suite 1200, Chicago, Illinois, 60611, 312-440-4300.

**July 18-25: Practical Periodontics for General Dental Practitioners**, a ski seminar at Mount Ruapehu. Contact: The Chairman, New Zealand Dental Association, P.O. Box 28-084, Auckland 5, New Zealand.

**July 19-24: First International Symposium on Management of Pain, Stress, Fear and Anxiety**, Tel-Aviv. Topics include Biochemical, physiological and psychological correlates of pain, stress, fear and anxiety and Clinical Management. The official language of the symposium is English. Contact: Program Chairman, Prof. Y. Sharav, School of Dental Medicine, Hebrew University of Jerusalem-Hadassah, Jerusalem, Israel. Telephone: 972-2-446146.

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## AUGUST/AOÛT

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**August 2-8: International Association of Forensic Sciences Triennial Meeting**, Vancouver, B.C. Contact: International Association of Forensic Sciences, 750 Jarvis Street, Suite 801, Vancouver, B.C., Canada, V6E 2A9.

**August 10-19: Modern Periodontics in General Practice**, a series of one day seminars organized by the Education and Research Committee of the New Zealand Dental Association. Contact: Dr. Malcolm S. Farry, P.O. Box 6056, Dunedin, New Zealand.

**August 15-21: Head, Neck and Orofacial Pain Management**, a ski seminar in Queenstown. Contact: South Pacific Seminar, 33 Arney Road, Auckland 5, New Zealand.

**August 21-23: California Dental Association's Fall Scientific Session**, San Francisco, California. Contact: Cissie

Cooper, 818 'K' Street Mall, Post Office Box 13749, Sacramento, CA, 95853-4749, (916) 443-0505, (800) 421-8702.

**August 21-23: 3rd Annual Symposium of the American College of Oral Implantology**, Kiawah Island Resort, South Carolina. Contact: Margaret M. Jackson, Executive Director, I.C.O.I., P.O. Box 2277, Grand Central Station, New York, New York, 10163. (201) 783-6300.

**August 24-29: Biennial Conference of the New Zealand Dental Association**, Wellington, New Zealand. Contact: Dr. Robert A. Stallworthy, NZDA, P.O. Box 3709, Wellington, New Zealand.

**August 28-29: Bio-Research TMJ Seminar**, Los Angeles, California. Contact: Bio-Research Associates, 2315 North Lake Drive, Milwaukee, Wisconsin, 53211.

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## SEPTEMBER/SEPTEMBRE

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**September 3-4: Success – How to Make it Happen**, sponsored by the Hawaiian Dental Association. Contact the Continuing Education Committee of the Association at: 1000 Bishop Street, Suite 805, Honolulu, Hawaii, 96813.

**September 11-18: Academy of General Dentistry's autumn Foreign Conference**, Denmark to Norway. Post-conference optional tour available. Contact: Kathleen O'Donnell (312) 440-4308.

**September 17-19: Canadian Association of Orthodontists Annual Scientific Meeting**, l'Hôtel, Toronto. Scheduled speakers are Dr. Robert Ricketts and Dr. Donald Woodside. Contact: Catherine Anderson-Brown, Canadian Association of Orthodontists, 2175 Sheppard Avenue East, Suite 110, Willowdale, Ontario, M2J 1W8, (416) 491-2886.

**September 17-19: Canadian Academy of Restorative Dentistry Annual Meeting**, Hilton Hotel International, Québec City, Québec. Simultaneous translation program, registrations limited. Contact: Dr. Hubert Gaucher, Dental School, Laval University, Québec, Québec, G1K 7P4, (418) 656-5557.

**September 18-20: The Northern Ontario Dental Association Convention**, Pinewood Park Motor Inn, North Bay, Ontario. Contact: Dr. Gaetan Fournier (705) 472-5300.



**September 20-24: Orthognathic Seminar**, Waitangi Hotel, New Zealand. Contact: The Secretary, Orthodontic Society, New Zealand Dental Association, P.O. Box 872, Tauranga, New Zealand.

**September 21-22: British Society for Oral Medicine's 1st International Congress**, Royal College of Physicians of London, London, England. Contact: Jennifer Nathan, Congress Secretary, B.S.O.M., International Congress, Dept. of Oral Medicine, The London Hospital Medical College, Turner Street, London, E1 2AD, UK.

**September 23-26: Dentechnica Nuremberg 87 – 9th International Congress of Dental Technicians with Specialized Exhibition for Dental Laboratories**, Nuremberg Exhibition Centre, Nuremberg, West Germany. Motto: "precision in dental technology is not a matter of chance". Contact: NMA Nürnberger Messe-und, Ausstellungs-gesellschaft mbH, Messezentrum, D-8500, Nürnberg 50.

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## OCTOBER/OCTOBRE

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**October 4-7: New Zealand Dental Association Meeting**, Nelson, New Zealand. Contact: Dr. M. Towers, Conference Secretary, 318 Trafalgar Square, Nelson, New Zealand.

**October 10-13: American Dental Association Annual Convention**. Las Vegas, Nevada. Contact: ADA office of international affairs, 211 E. Chicago Ave., Chicago, Ill. USA 60611.

**October 19-21: National Institutes of Health's Consensus Development Conference on Geriatric Assessment Methods for Clinical Decisionmaking**, Warren Grant Magnuson Clinical Center, Bethesda, Maryland. Contact: Ms. Marti Bernstein, Prospect Associates, 1801 Rockville Pike, Suite 500, Rockville, Maryland, 20852, (301) 468-6555.

**October 21-24: American Academy of Periodontology's 73rd Annual Meeting**, Marriott and Fairmont Hotels, Denver, Colorado. Contact: Jean Pierson (312) 787-5518.

**October 22-25: The 15th Expodental and the 2nd Expotechnodental**, Milan, Italy, at the Milan Fair. Contact: Expodental, 20123 Milano, via Tamburini 2, ITALY.

**October 24-30: 85th Annual World Dental Congress of the FDI**. Buenos Aires, Argentina. Contact: Dr. R.H. Lemme, Congressos Internacionales, SA, Moreno 584-9e, Piso (1091) Buenos Aires, Argentina.

**October 29–November 1: Canadian Academy of Endodontics Convention**, Toronto, Ontario. Contact: Dr. Martin Gelfand, 487 Lawrence Avenue West, Toronto, Ontario, M5M 1C6.

**October 30-31: Periodontal Restoration Relationship Symposium**, Toronto, Ontario. Clinicians include Dr. Herman Corn, Dr. Myron Nevins and Dr. Kenneth Malament. Contact: Professional Development, The Ontario Dental Association, 234 St. George Street, Toronto, Ontario, M5R 2P1, (416) 922-3900.

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## NOVEMBER/NOVEMBRE

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**November 3-6: Clinical course on rehabilitation of edentulism by means of osseointegration**, Catholic University Leuven, Belgium. Contact the University at: Faculty of Medicine, Dept. of Periodontology, Capucijnenvoer 7, B-3000 Leuven (Belgium).

**November 5-7: Second District Dental Association of Pennsylvania's Annual Dental conference**, Sheraton-Valley Forge Hotel and Convention Center, King of Prussia, Pennsylvania. Speakers will include Dr. Ronald Goldstein and Dr. R. Sheldon Stein. All day programs, table clinics and special programs. Contact: B.J. Dencler, Conference Coordinator, 1039 Louise Lane, Allentown, Pennsylvania, 18103. 215-820-4062.

**November 5-9: Education, Attitudes, Motivation and Marketing**, a venture trek outdoors seminar at Ohakune. Contact: South Pacific Seminars, 33 Arney Street, Auckland 5, New Zealand.

**November 9-14: First International Congress on Oral Cancer**, Singapore. Special features include Reconstructive and Microvascular Surgery. Contact: Dr. N. Ravindranathan, First International Congress on Oral Cancer, Dept. of Oral and Maxillofacial Surgery, Faculty of Dentistry, National University of Singapore, Lower Kent Ridge Road, Singapore, 0511.

**November 11-13: First International Congress in Oral Cancer**, Singapore. Special features include Reconstructive and Microvascular Surgery. Speakers include

Professor Westbury of Royal Marsden Hospital, U.K. and Professor Hugo Obwegeser of Switzerland. Contact: Dr. N. Ravindranathan, Organizing Secretary, First International Congress in Oral Cancer, Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, National University Hospital, Lower Kent Ridge Road, Singapore, 0511.

**November 19, Oahu, November 20, Kauai: An update on Pain Control and Emergency Medicine in Dentistry**, sponsored by the Hawaiian Dental Association. Contact the Continuing Education Committee of the Association at: 1000 Bishop Street, Suite 805, Honolulu, Hawaii, 96813.

**November 26: Toronto Academy of Dentistry's 50th Annual Winter Clinic**, Metropolitan Toronto Convention Centre, 255 Front Street West, Toronto, Ontario. Contact: Academy of Dentistry at (416) 967-5649.

**November 27: Practice Management**, Royal York Hotel, Toronto. Chuck Sorenson, lecturer. Fee: AGD members \$125, non members \$200. Contact: Dr. Marotta (416) 735-3310.

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## JANUARY 1988

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**January 19-23: Hawaii Dental Association's 85th Annual Scientific Session**, Hilton Hawaiian Village Hotel, Honolulu, Hawaii. Contact the Association at (808) 536-2135.

**January 28 – February 1: 13th Asian Pacific Dental Congress and 42nd IDA Conference**, New Delhi, India. Theme Esthetic Dentistry. Contact: Secretariat, C-56, N.D.S.E. – II, New Delhi 110 049.

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## APRIL 1988

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**April 14-17: California Dental Association's Spring Scientific Session**, Anaheim, California. Contact: Cissie Cooper, 818 'K' Street Mall, Post Office Box 13749, Sacramento, CA, 95853-4749, (916) 443-0505, (800) 421-8702.

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## MISCELLANEOUS

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**BRITISH COLUMBIA:** Associateship Available — Associate required for general practice in Lillooet, B.C. by the Fraser River. Excellent opportunity for full or part time. Reply in writing to Dr. Barry Goldberg, Box 188, Lillooet, B.C. V0K 1V0 or phone Dr. Goldberg or Rita at (604) 256-4616.

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**ALBERTA: OWN YOUR OWN PRACTICE** — Looking for a fast working associate to help with a 2 office, single doctor practice, that has grown too big to handle. Practices are located in Lethbridge area of Southern Alberta, are 5 years old and within one hour travelling time of each other. New building being built for one practice; all equipment



state of the art. Either practice for sale after successful associateship established. Contact Dr. Harold Elke: Tue, Thu, Fri (403) 732-5621; Mon, Wed, (403) 647-2482.

**ONTARIO—Ottawa:** ASSOCIATE — PARTNERSHIP: Full time associate required for well established modern dental facility, long term arrangement with view to full partnership. Call Dr. Len Burman (613) 745-7450 (Days) (613) 521-0565 (Evenings).

**ONTARIO—Windsor:** ASSOCIATE/PARTNER — High energy, motivated dentist for busy, progressive, quality-oriented practice; full or part-time; early buy-in potential. Please contact CDA Box 2363.

**ONTARIO:** ASSOCIATE wanted for Oral and Maxillofacial surgery practice in Eastern Ontario. Candidate should be certified as specialist in Ontario or should be eligible for specialty certification. Send Résumé to Box 2360.

**ONTARIO:** ORTHODONTICS: Associateship leading to purchase, very busy border city edgewise practice, superb people oriented staff, large TMJ, surgical and cleft patient load. An exciting and rewarding practice. Please reply to CDA Box 2359.

**QUÉBEC—Ottawa-Hull:** Area practice located in Aylmer, Québec. Bilingual extra-verted dentist required immediately for associateship leading to partnership. Established office with high patient load. Ottawa is but five minutes away. Please reply to CDA Box No. 2346.

**NOVA SCOTIA—Halifax:** Associate or cost-sharing partner needed for expanding metro practice. Due to other commitments owner is willing to negotiate mutually beneficial arrangements. Serious inquiries please write to: Dr. Bruce McLaughlin, P.O. Box 876, Dartmouth, NS., B2Y 2Z5.

**NEWFOUNDLAND—St. John's:** Associate required to join group practice with a view to partnership. Applicant should be enthusiastic, caring and capable in all aspects of general dentistry. Reply to CDA Box 2358.

## OPPORTUNITIES AVAILABLE

**NORTHWEST TERRITORIES:** Our well established dental practice requires a Dental Hygienist to work in a modern spacious environment utilizing the latest in equipment. Our clinic is located in Yellowknife, the capital of the Northwest Territories, offers a unique lifestyle on Canada's last

frontier. For further information contact: Dr. Hussain Biat, P.O. Box 1178, Yellowknife, N.W.T., X1A 2N8. Office: (403) 873-4578. Home: (403) 920-2185.

**BRITISH COLUMBIA—Kelowna:** DENTAL HYGIENIST — Self-motivated dental hygienist required for a progressive, team oriented, family practice. Position available July 1, 1987 for 4 days/week. Excellent opportunity for personal and professional growth. Bonus system offered. Apply to Drs. Tom & Barbara Gordon, #312-1890 Cooper Rd., Kelowna, B.C., V1Y 8B7. (604) 860-3144.

**BRITISH COLUMBIA—Kelowna:** Needed: An additional full or part-time Hygienist four days a week (M-TH) for our team oriented preventive family dental practice. For more information about living in B.C.'s Four Seasons Playground, please contact Bob Lowery R.D.H. at Dr. Daryle Edstrom's office Work # (604) 762-2215 or Home # (604) 768-3152.

**BRITISH COLUMBIA—Nanaimo:** DENTAL HYGIENIST REQUIRED. Full or part-time opening available in a well established general practice. Send résumé to Dr. L. Tessari, #16 - 2159 Departure Bay Rd., Nanaimo, B.C., V9S 3V5, or call collect 604-758-1168.

**SASKATCHEWAN:** Practice opportunity for associate dentist to join extended hour Medical & Dental Clinic with 70,000 medical visits per year. Recently opened Dental Clinic growing by 6-10 new patients per day. Apply with résumé to Dr. R. Katz, 357 Albert St., Regina, Saskatchewan, S4R 2N6. (306) 775-2175.

**ONTARIO:** Locum position available at Hamilton Psychiatric Hospital, Hamilton, Ontario, Sept. 1, 1987 - Aug. 1, 1988. All areas of general dentistry provided for in- and out- psychiatric patients. Modern facility in an accredited teaching hospital. For further information please contact: Dr. Barbara Price, Hamilton Psychiatric Hospital, Dental Clinic, Box 585, Hamilton, Ontario, L8N 3K7. Phone no. (416) 388-2511 ext. 319.

**ONTARIO:** The Department of Pathology of the University of Western Ontario is seeking a faculty member with training in oral pathology and with an active research program with potential for funding. This is a full-time position, academic rank and salary commensurate with applicant's experience. Initial appointment 1-2 years. D.D.S. and advanced qualifications in oral pathology required. In addition to conduct-

ing of research program the candidate will be expected to take part in undergraduate and graduate teaching in oral pathology. Enquiries or applications, which should include a curriculum vitae and the names of three referees, should be sent to: Robert A. Goyer M.D., Professor and Chairman, Department of Pathology, The University of Western Ontario, London, Ontario N6A 5C1. Closing date: When position filled. In accordance with Canadian Immigration requirements this advertisement is directed only to Canadian citizens or permanent residents. The University of Western Ontario encourages both men and women to apply for positions.

**ONTARIO:** ORAL SURGEON WANTED: for busy practice in Toronto office. Anesthesia essential. Salaried position with benefits. Contact Drs. Siegel, Gaum & Moon, 1355 Victoria Park Ave., (416) 752-9500.

**HONG KONG:** UNIVERSITY OF HONG KONG — Chair of Oral Surgery and Oral Medicine. Applications are invited for the Chair of Oral Surgery and Oral Medicine which will be vacant from September 1, 1987. Applicants should have a substantial record of teaching and research, and appropriate professional experience. The University would prefer to make a permanent appointment, but consideration may also be given to applications for appointment on fixed or secondment terms of preferable not less than three academic years. The University reserves the right to fill the Chair by invitation or to make an appointment at a lower level. Annual salary (superannuable) will be within the professorial range and not less than HK\$83,800 (approx. C\$98,950 equivalent as at 13 April 1987). At current rates, salaries tax will not exceed 16½% of gross income. Housing at a rental of 7½% of salary, children's education allowances, leave, and medical benefits are provided. Further particulars and application forms may be obtained from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF, England, or from the Appointments Unit, Registry, University of Hong Kong, Hong Kong. Closes: 11 July 1987.

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**The Director**  
Division of Graduate/Postgraduate Studies  
Faculty of Dentistry  
The University of British Columbia  
#350 - 2194 Health Sciences Mall  
Vancouver, B.C. Canada V6T 1W5

Closing date for receipt of fully documented applications is October 1 for admission the following summer.

## THE UNIVERSITY OF BRITISH COLUMBIA

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- 2) A 3-year program leading to both the certificate (diploma) in periodontics and the M.Sc. degree.

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Further information and application forms may be obtained from:

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Faculty of Dentistry  
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The Department of Restorative Dentistry requires a full-time faculty member with advanced education in the Division of General Dentistry, effective 1 September 1987. The most desirable applicant will have advanced education in General Dentistry, demonstrated professional development, the proven ability to administer a general practice and to teach at the undergraduate level and must be eligible for licensure in Nova Scotia. Faculty members are expected to be active in research, continuing education and will have private practice privileges.

Dalhousie University has a policy of affirmative action in hiring qualified women academic staff. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Applications should be submitted complete with curriculum vitae and references to:

**Dr. W.A. MacInnis, Head**  
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Halifax, Nova Scotia, B3H 3J5



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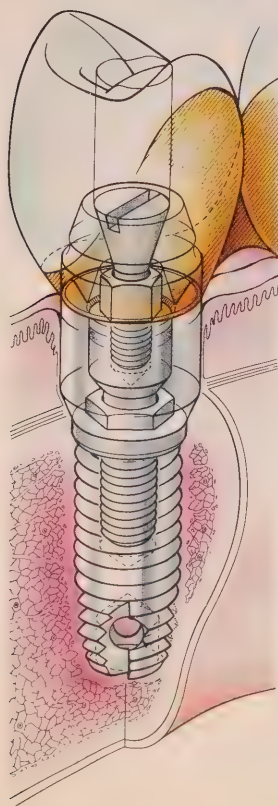


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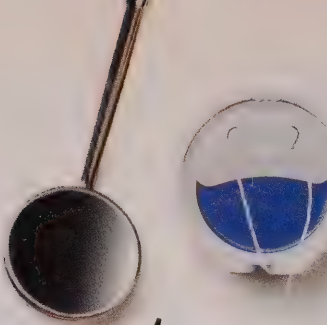
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